SEPTEMBER 1925 ~ Nº 236

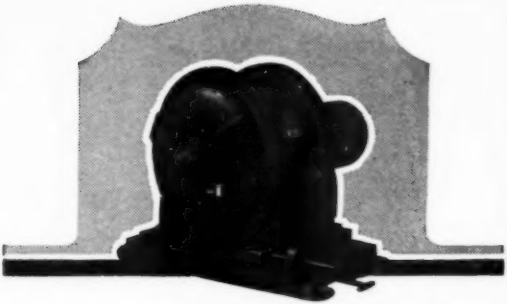
Monthly

A Reference for Buyers

Distributed Free to Machine Tool Users Everywhere in the United States and to Dealers in American Machinery Abroad

Published by
A.H.HITCHCOCK
1220-1235 Coxton Building
Chicago

FOR INDEXES SEE LAST PAGES



Type A.A. RELIANCE Induction Motors

represent—

the Experience of users

plus—

our 20 yrs. of Experience in building good motors

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches:

BOSTON PHILADELPHIA CHICAGO CINCINNATI
NEW YORK PITTSBURGH DETROIT BIRMINGHAM, ALA.

We specialize in motors, sizes 1/2 to 200 h. p. constant and adjustable speed D. C.; squirrel cage and slip ring A. C.

Order Your High Speed Drills from This Booklet

Recently a prominent shop superintendent gave orders that, hereafter, no one in his plant was to order "high speed drills," but always to specify "Cle-Forge High Speed Drills."

We'll cheerfully send you a copy of this booklet telling all about the famous "Cle-Forge" Drills. A request for it places you under no obligations whatever.

The CLEVELAND TWIST DRILL COMPANY CLEVELAND NEW YORK CHICAGO LONDON

TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES

Manufacturers, also, of

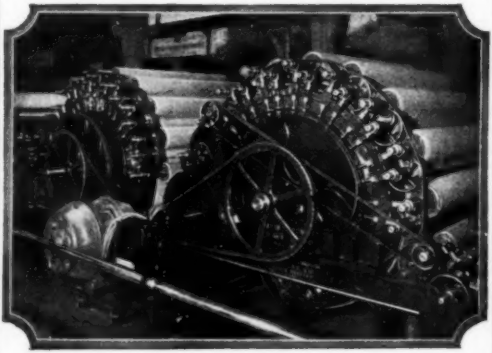
Carbon and High Speed Drills for every purpose; "Mezzo" Super-Carbon Drills; Hand, Jobbers' and Shell Reamers; "Peerless" High Speed Reamers; "Paradox" Adjustable Reamers; "Quick-Set" Reamers; Chucking Reamers for Turret Lathes; Counterbores; Countersinks; Sockets; End Mills; and the "Ezy-Out" Screw Extractors.

CLE-FORGE

TRADE MARK REG. U.S. PAT. OFF.

"WHITNEY"

Silent Chain Drives



Adaptability

The tremendous advantage of INDIVIDUAL MOTOR DRIVES on many kinds of Machinery has been made possible by the adaptability of "Whitney Silent Chain Drives."

Let us fit the drive to the job

THE WHITNEY MFG. CO., - HARTFORD, CONN.

NEW YORK
L. C. Biglow & Co., Inc.
250 W. 54th St.

BOSTON
George C. Steil
727-A Boylston St.

PHILADELPHIA
R. J Howison
1505 Race St.

PITTSBURGH
Pittsburgh Gear & Mch. Co.
27th & Smallman Sts.

SYRACUSE, N. Y.
George McPherson
201 Norwood Ave.

DETROIT
A. G. Brice
2-240 Gen. Motors Bldg.

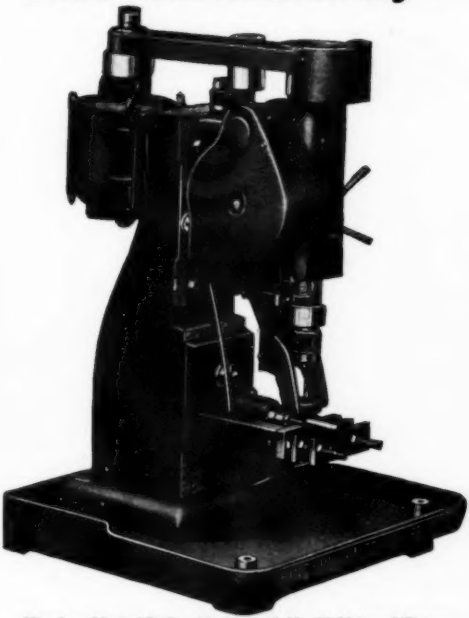
CLEVELAND
Smith Power Transmission Co.
1218 Ontario St.

CHICAGO
E. H. Huntington
215 Machinery Hall

SAN FRANCISCO
A. H. Coates Co.
615 Howard St.

SEATTLE, A. H. Coates Co., 1115 East Union St.

Drill Automatically—



Kingsbury Vertical Drilling Machine with No. 82 Universal Fixture

OPERATOR: **1.** Inserts blank, simultaneously engaging power feed.
2. Picks up fresh blank.

MACHINE: **1.** Automatically clamps work.
2. Drills work under uniform pressure with friction control absolutely with as coarse a feed as the tool will stand.
3. Unclamps and ejects work.
4. Stops until operator inserts fresh piece.

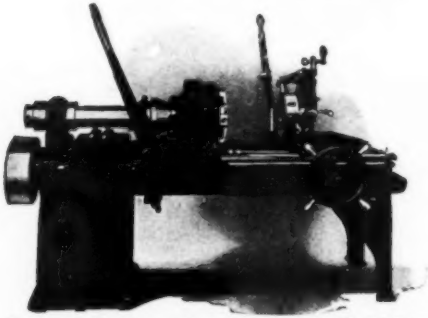
This is a machine for short run jobs where production counts

Write for catalogue of production drillers

Kingsbury Manufacturing Co., - Keene, N. H.

Some Points of Excellence Pointedly Given in re.

Bignall & Keeler Pipe Machines



No. 2 PDQC—Threading and Cutting Off—Cap. ¼" to 2"—Belt Drive

¶ B & Ks are equipped with a gear box drive for obtaining the correct threading speed for every job.

¶ All uncertainty or guess work in selecting the right speed for threading each size of pipe is positively eliminated.

¶ Dies can be changed without removing a screw.

¶ Die slot can be cleaned without removing the cover.

¶ A rotary oil pump supplies oil to dies and cutting-off tool.

¶ Pump is gear driven—there's no belt to soak up oil.

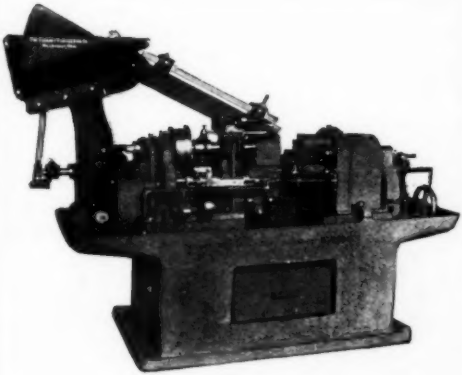
¶ All B & Ks have the Peerless adjusting mechanism.

¶ The larger machines have two gripping chucks.

¶ Our half-century of manufacturing experience is behind our line of 17 styles and sizes. Our experts will gladly help you make a selection. ***Send your inquiries to us now at***

EDWARDSVILLE, ILLINOIS

Bignall & Keeler Machine Works



USE

ECONOMY COMBINED POINTING AND THREADING MACHINE TO REDUCE BOLT COSTS

Range ¼"x1" Bolts to ¾"x5½" Bolts

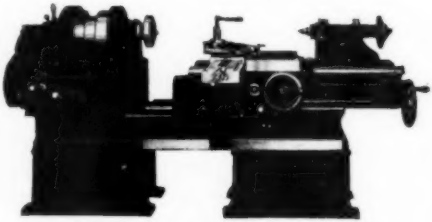
The Economy Engineering Company

WILLOUGHBY, OHIO

Rahn-Larmon 18"/36"

Extension Bed Gap Lathe

A lathe of so wide a range that it reduces to a minimum the amount of equipment required, as well as operating time, in jobbing shops, railroad shops, or wherever there is a large variety of work to be done.



The Lathe with the Wide Range

There is hardly a reasonable limit to the work that can be done on this modern Extension Gap Lathe. It enables the operator at all times to have a lathe ready for any job, without tearing down and setting up.

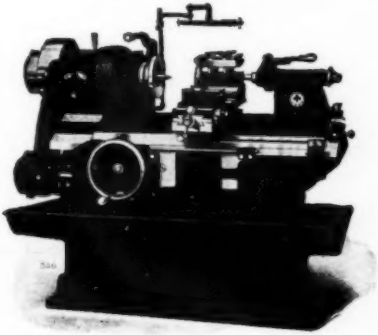
And not only is it versatile, but it is a real lathe on every job. It is so sturdily constructed that it absorbs the vibrations of the heaviest cuts. And as for convenience—that's its strong point. Arranged for belt or a. c. or d. c. motor drive. Also made in 22"/40" and 28"/50" sizes.

Get in touch with us. Find out what this lathe will do for you and how it saves costs. Glad to go into the matter with you fully, without obligating you in any way.

The Rahn-Larmon Company

Cincinnati, Ohio

The LeBLOND Multi-Cut Lathe



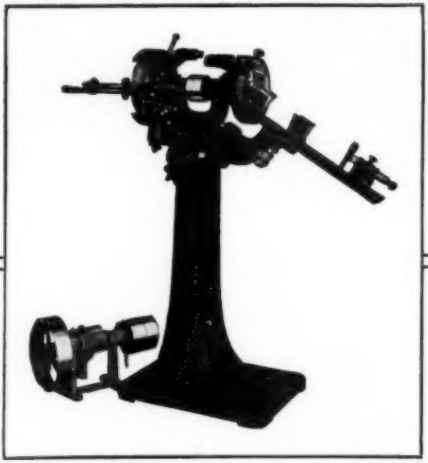
LeBlond No. 9 Multi-Cut Lathe

The Multi-Cut is a semi-automatic lathe adapted to combined turning and facing cuts using multiple tools. The set-up is very simple and quickly accomplished, there being no cams to consider. The machine can therefore be used profitably on relatively small lots.

Our complete catalog describes the several sizes in detail. We will gladly send it to interested parties.

THE R. K. LeBLOND MACHINE TOOL COMPANY

CINCINNATI, OHIO



Grand Rapids Drill and Tap Grinder

Drills and Taps Ground on This Machine

CUT FASTER STAY SHARP LONGER
PRODUCE MORE AND BETTER WORK

Than Any Hand Ground Tools

The installation of this machine will enable you to reduce drill and tap breakage to a minimum. Both sides of machine can be operated at the same time.

Bulletin on Request

Gallmeyer & Livingston Company
342 Straight Ave., N. W.
GRAND RAPIDS, MICHIGAN, U. S. A.

Cutter and Tool Grinders

For All Classes of Work

No. 11 Cutter and Tool Grinder

The Nos. 10, 11 and 12 give a range of sizes that will take care of any kind of cutter and tool work as well as light cylindrical grinding.

Let us recommend the proper sizes for your work

Landis Tool Company

Waynesboro, Pa.

New York Office: 30 Church Street **Detroit Office: 5928 Second Blvd.**
Chicago Office: 618 W. Washington Blvd.

Cleveland Open Side Planers

26' to 72'

WHY NOT ASK?

We know more about Open Side Planers than anything else. Perhaps we can suggest the right machine for your purpose.

Box Tables.
Self Oiling Bushings.
All Steel Gears, Shafts and Pinions.
Ball Bearing Countershafts.
Forced Feed Lubrication to V's if desired.
Tool Box in Bed.

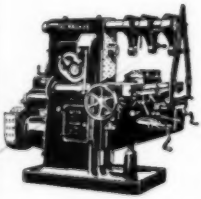
Send for circular.

The Cleveland Planer Co., 3148 Superior Avenue., CLEVELAND, OHIO

Established in 1900

WANTED—

K&T Millers!



If you have in your shop a used MILWAUKEE Milling Machine that you wish to dispose of, or trade in toward a new machine, kindly notify us.

Please include size and type of machine, serial number (stamped on front of knee), location, condition, and price you will sell for.

Address: Rebuilding Department

MILWAUKEE MILLING MACHINES

KEARNEY & TRECKER

CORPORATION

West Allis Station **Milwaukee, Wisconsin**

Threading at 3000 R. P. M.

These rods are being threaded with a No. 8-32 thread 5-16" long, at an average production of 1400 pieces per hour on our Standard High Speed Tapping Machine.

How about your threaded work?

Leland-Gifford Co.

Worcester, Mass., U. S. A.

BRANCH OFFICES:

Boston	Chicago	New York
Cleveland	Detroit	Rochester

LELAND-GIFFORD COMPANY · WORCESTER MASS. U.S.A. · MACHINE TOOLS · CHUCKS

HOW BIG ARE YOU ?

HOW BIG
DO YOU WANT TO BE ?

HAVE YOU STOPPED GROWING ?

THE BIGGER
YOU ARE

OR WANT
TO BE

THE LESS
CAN YOU AFFORD
OUT OF DATE EQUIPMENT

Avey
DRILLING
MACHINES
ARE USED IN
THE BIGGEST
PLANTS IN
THE COUNTRY;
PLANTS THAT
ARE STILL
GROWING

WHY?

STOP!
JUST THINK A
MOMENT—
THE LARGEST
PLANTS IN
THE COUNTRY

Avey
MACHINES
ARE THERE

WHY?

Let us help you make profits
THE AVEY
DRILLING MACHINE CO.
CINCINNATI

A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

A Real Quick Change

Drill Chuck

No hammer or special device required. No separate drift or key to get mislaid. Simply strike the end of drill, and out it comes. A one-armed man can do it.

The Titan Drill Chuck

has all the good features of other chucks of this type, plus a "quick change" that's real. Operates in any position.

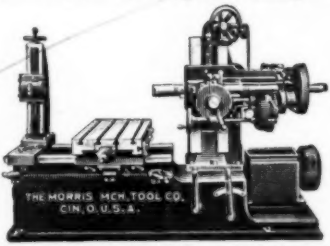
Made in sizes No. 0 to No. 5 for any taper shank drill, counterbore, reamer or similar tool. Saves time; cuts costs.

Write for description and prices

Titan Tool Company
Erie, Penna.

You will find plenty of use for a

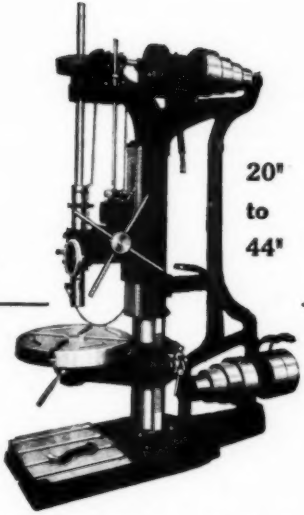
Morris Horizontal Drilling and Boring Machine



It will make money for you on jobbing work, in the tool room or on production work. Micrometer adjustments on the head, table and bar support, and it is built to hold its accuracy.

Our circular will tell you more about it, and the price is right

The Morris Machine Tool Co., Cincinnati, Ohio



More Drilling per Dollar with

Aurora Upright Drills

The "Aurora" is built for results. The large pulley diameter and ratio of gearing provide the greatest "pull" at the drill point.

Has patent tapping attachment, enclosed positive gears, automatic release worm wheel, fool-proof table, and every modern convenience for expediting the drilling of holes at a minimum expenditure of time and cost. Made in sizes 20, 21, 22, 24, 26, 28, 32, 36, 40 & 44-inch.

Write for literature and the close prices

The Aurora Tool Works

DIVISION THE OESTERLEIN MACHINE CO.

3303 Spring Grove Ave., Cincinnati, Ohio

A Complete Motor-Driven

14" Sensitive Drill

A convenient, reliable, rigid tool for the quick and accurate drilling of holes ½" and smaller.

Price, with motor, switch and belts..... **$115**

Or without motor, switch and belts..... **$70**

Built in a machine tool shop, according to the best engineering practices. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds. Further details upon request.

The U. S. Machine Tool Co.

1952 W. 6th St., Cincinnati, Ohio

Sigourney Sensitive Drills

Plain or Ball Bearing
Belt or Motor Drive

WE MANUFACTURE sensitive drills exclusively. They are built for ***service***, and in quality are unsurpassed.

SIGOURNEY DRILLS are made with one to four spindles. The illustration shows our one-spindle ball bearing drill. It has vertical adjusting head, adjustable table, three speeds, runs true and is very sensitive. ***All parts are interchangeable.*** Shipped belted ready for use.

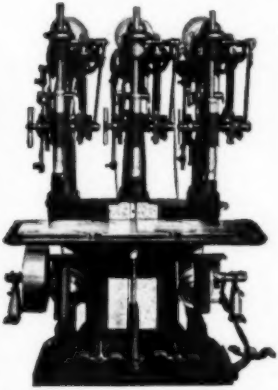
Write for circulars and prices

Sigourney Tool Co.

Hartford, Conn., U. S. A.

Reduce Your Drilling Costs

With the Rockford Automatic



—superior in convenience, capacity, and workmanship, a real top-notcher

---

Built with 2, 3, 4 and 6 Spindles

Box Column Type

LOWER SHOP COSTS is your ever-present problem. Unless you have recently brought your equipment up to date, it's very likely that one or more of our machines would be the means of reducing your cost of production. Superintendents are well satisfied with their Rockfords.

AUTOMATIC RETURN—When each spindle has completed its operation it automatically returns to its highest position where it remains until the starting lever is tripped, when it immediately drops to position above the work.

PLEASE NOTE—By removal of the stop pin in the cam, the spindle will immediately return to lowest position above work, and when tripped by automatic stop, will return to highest position and immediately drop again to work, repeating the movement automatically until the power is shut off. The spindle can be pulled ahead of the feed while in operation, a great advantage in drilling through a cored piece, piping or similar work.

We invite you to submit your drilling problems to us

Rockford Drilling Machine Co.

Rockford, Illinois

The "Utility" Sleeve

Cuts Small Tool Costs

Insert a straight shank drill or reamer in this Sleeve, and it works as efficiently as a solid taper shank tool.

Only the straight shank tool of high speed steel is discarded when worn or broken—not the entire taper shank tool. Cuts tool costs, saves time, increases output.

A Detachable Taper Shank for Straight Shank Tools

Write for "Utility Tools" Catalog

The J. C. Glenzer Company

6469 Epworth Blvd., DETROIT, MICH.

Multiple Drilling

On Your Single Spindle Drilling Machine

Do your multiple drilling in any pattern on a single spindle drill with a

U. S. Multiple Spindle Drill Head

Made regularly with 2 to 6 adjustable spindles. Special heads made to your order, with adjustable or fixed spindles.

Let us help you make a worth-while saving

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

ETTCO Hand-Operated Keyless Drill Chuck

There is no key to lose, often saving considerable loss of time.

The grip tightens as the work becomes harder. The turning of drill spindle forces jaws on to the conical screw, tightening their grip on the drill.

Easily released by hand, no matter how tight the grip.

New low prices and special trade-in offer. See your dealer or write to us for details.

Ettco

High-Speed Sensitive Tapping Attachment

Real sensitive tapping without adjustment, with unusual smoothness and speed, are its main features.

The leather-lined cone clutch and cast iron driving cones have a smoothness of action and a slipping point which prevents tap breakage. Speed under instant control, and reverses twice as fast. An aluminum case and light alloy steel parts reduce weight to a minimum.

Ask us about Ettco Chucks and Tapping Attachments

Eastern Tube & Tool Co., Inc.

580 Johnson Ave., Brooklyn, N. Y.

Towsley Trucks Pay 500%

Every Year on Their Cost Price

Glad to tell you how

TOWSLEY TRUCKS

repay their cost every two to three months.

Every style for every need.

Write for facts and figures; you'll be glad you did

John T. Towsley Mfg. Co., Cincinnati, Ohio

Don't Call a Gang of Men

away from their work to do the lifting and lugging of heavy pieces.

The CanTon Crane, Hoist and Truck

does it so much more quickly, easily and safely, with only a one-man crew. Several sizes, to handle up to 6,000 lbs. A big economy and modern necessity. "The handiest tool in the shop."

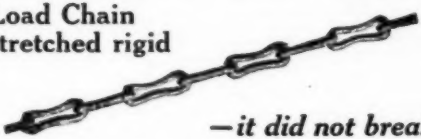
It will pay you to write today for Booklet E-8

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 203 East 15th Street, Second Floor

TRIBLOC CHAIN HOIST

Load Chain stretched rigid



—*it did not break*

Overloads are not good for *any* hoist—but here is what happened to a Tribloc Chain Hoist in the shop of a user.

An overload stretched the load chain *rigid*—as unyielding as a small steel rod—the links having locked into each other without breaking.

A new load chain was inserted and the Tribloc Chain Hoist again placed in active operation.

The *strength* and *safety* of Ford Tribloc Chain Hoists for *any* hoisting job is the result of using only approved and tested materials—and basing the design of each part on sound engineering principles, allowing a 3½ to 1 factor of safety in the weakest part.

Capacities up to 40,000 lbs.

Send for Catalog 6-B

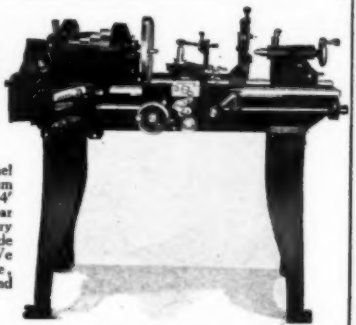
Ford Chain Block Company

2nd & Diamond Sts., Philadelphia, Pa.

Ford Chain Hoists are made in many sizes and types. The ¼ ton to 2 ton types is shown above. The Screw type is a light weight, powerful hoist preferred for portable use. The Differential Type is recommended for use where light loads are handled occasionally.

2285-D

If It's Service You Want



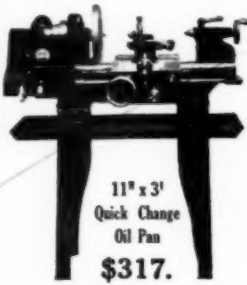
Get a Sidney Lathe! Here is our Medium Pattern 11" x 4' Quick Change Gear Type. Nearly every type of lathe is made in Sidney shops. We give real service, broad guarantees, and assure right prices.

SIDNEY SERVICE

Send for fully illustrated and descriptive catalog. It's free. Address Dept. 1809

The Sidney Machine Tool Co.
Sidney, Ohio

Monarch Jr. Lathes



are the smallest members of the Monarch lathe family. Yet they are the "biggest little lathes" built.

The Monarch line of lathes includes all sizes and types from the little 9-inch Junior lathe to the big, massive 30-in. lathe. In this line there is a lathe to fill your requirements at the price you want to pay.

Send for Catalog

The Monarch Machine Tool Co.
206 Oak Street, Sidney, Ohio

Bear This in Mind!

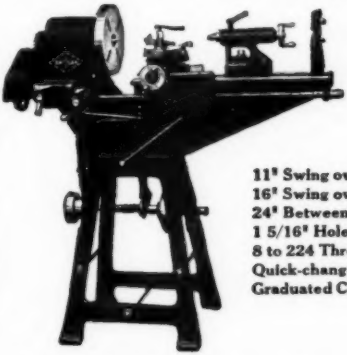
The "ARTISAN" Lathe is not a "War-baby"

It was introduced in 1922 when "Get Back to Normalcy" was the slogan of the day.

The "ARTISAN" Lathe ***has made good*** during three of the most hectic years in the industries.

Today it stands out as the greatest value in small Lathes on the market.

There are mighty good reasons for its consistent increase in popularity, and if YOU don't know these reasons, you are overlooking a golden opportunity to lower your costs on ***any*** work within its unusual capacity.



11" Swing over Bed
16" Swing over Gap
24" Between Centers
1 5/16" Hole thru Spindle
8 to 224 Thread Range
Quick-change Gears
Graduated Compound

A post-card from YOU will bring full particulars and the name of the nearest dealer who can show you this up-to-date machine.

Artisan Mfg. Co. Station "N" Cincinnati, Ohio

Gold Seal
SEBASTIAN LATHES
GUARANTEED CORRECT
TRADE MARK

Write for details on our new
Gold Seal Lathes

$765

15"x6' Geared Head Lathe, Single Friction Pulley Drive, without Motor.

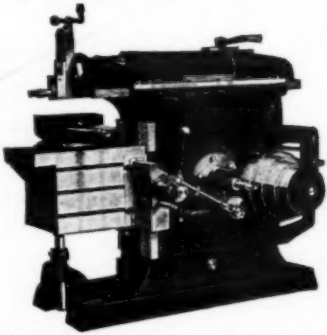
The Sebastian Lathe Company
1000 Culvert St., Cincinnati, O., U. S. A.

SHAPERS

12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

Belt Shifter Regular Equipment All Cone Driven Shapers.

32" Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co., Cincinnati, O., U. S. A.

Small Size — Big Value
Much Lower Cost

Rhodes Shaper and Slotter

It will not do big work, but—

Within its capacity it is a strictly modern, speedy, accurate shaper and slotter of the highest grade, it is more readily manipulated than are the larger tools, and the cost is in proportion to its size.

Its the best buy for tool and die work and for all shaping and slotting within its capacity.

Ask your dealer or write for
CATALOG H22

The Rhodes Mfg. Company

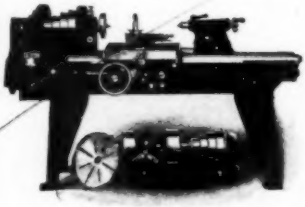
984 Park Road, Hartford, Conn.

SHAPERS — RHODES — SLOTTERS

Just-Rite Lathes

Have patented invisible gap without extra cost

Made in sizes from 10" to 20"



JUST-RITE in price

JUST-RITE in accuracy

JUST-RITE for your work

Easy payment plan if desired

JUST-RITE and let us show you a big saving

A. V. Carroll Machine Tool Co., Norwood, Cincinnati, O.

NOTICE—

To USERS Of

"Advance" Lathes

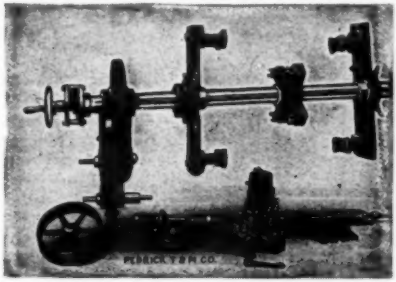
Formerly made at Milwaukee, Wis.

We have purchased the entire outfit for building these Lathes, and are prepared to give service on repair parts, etc.

The Carroll & Jamieson Machine Tool Co.

Batavia, Ohio

Pedrick Portable Tools



Portable Cylinder Boring Bars

For reboring in position locomotive cylinders and piston valves, cylinders of stationary engines, steam hammers, air compressors, and a wide range of other work. Often it finishes a job before it could be gotten into the shop, saving time, expense and costly delays. Its saving on work that is difficult to move is out of all proportion to its moderate cost.

As for durability, we doubt if you can wear out a Pedrick built bar. Many machines we made 25 years ago are still in use.

We also build Floor Type Boring Machines, Crank Pin Turning Machines, Pipe Benders, Portable Milling Machines, etc.

Write for copy of new catalog

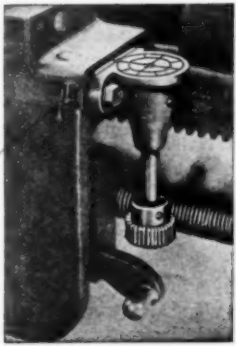
Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

E-Z THREAD DIAL

Cuts Cost of Thread Cutting

on all sizes of



Engine Lathes

This new device also increases your efficiency in thread cutting.

Eliminates stopping or reversing the lathe.

Saves cost of backing belt and the power to drive it.

Fast growing in popularity.

Write for folder today!

JAMES M. COLVEN

20 Wolfe Street, Yonkers, N. Y.

Barker Wrenchless Chuck

Developed and Manufactured by Thomas Elevator Co.

A complete Chucking Unit in itself. The Barker Wrenchless Chuck requires No Accessory Installations.

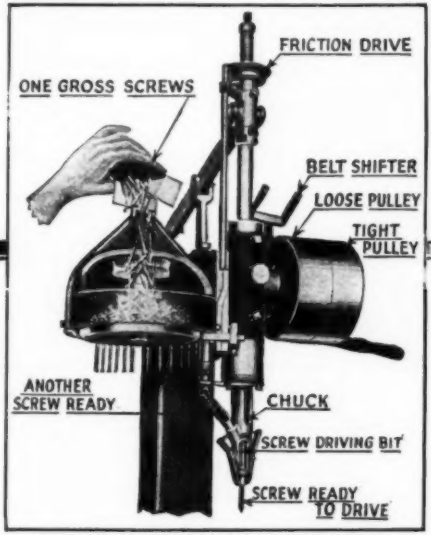
Made in two- and three-jaw styles, for every kind of turret lathe, automatic, and semi-automatic machine work.

Thomas Elevator Co.

Chuck Division

31 So. Hoyne Ave., Chicago

Magazine-Feed Screw Driving



Showing the Magazine Feed of the Reynolds Automatic

The operator dumps a gross or more machine or wood screws into the hopper, presses a foot lever, with hands free to handle stock, and that's all. The machine automatically does the rest.

Result: A boy or girl sets 800 to 1,200 screws an hour, while experts drive up to 2,000. This greatly reduces assembly costs, increases output, and insures uniform work.

Tell us dimensions over all of your work, with gauge and length of screws, and we'll outline a big economy.

The Reynolds Machine Co.

Dept. H. H., Massillon, Ohio

The BARKER GENERAL PURPOSE VISE

For Planers, Shapers, Drilling and Milling Machines

Two Sizes

Width of jaws	11½"—12"
Depth of jaws	2½"— 3"
Jaws open	8" —12"
Weight	180—210 lbs.

Also 16" Mold Makers' Vise

OUR MOLD MAKERS' VISE has 13" width of jaws, 7" depth, and jaws open 16"—weight 290 lbs.

ALL BARKER VISES are made **extra heavy,** with **steel faced jaws,** and are **graduated to swivel any angle.** They stand lots of hard usage.

Get in touch with us before buying

WM. BARKER & CO.

Manufacturer of Machine Tools, **COVINGTON, KY.**

Patented Jan. 30, 1917

Type 6

New "AUTEX" Extension Reel

1925 Model

Don't Forget the Swivel Joint Feature

Permits of carrying the lamp in any direction.

Rapidly finding a place in large Industrial Plants, Machine Shops and Service Stations.

Now equipped with Belden Rubber Cord
Approved by the Underwriters

Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.

1903 Powers St., **Cincinnati, Ohio**

Knickerbocker Says:

Efficiency + = Big Economy

The "Rarefied" Dust Collector

is thoroly efficient with all kinds of dust—heavy, flinty, gritty, grinding and cutting—collecting practically every particle heavier than air, with a suction that never varies.

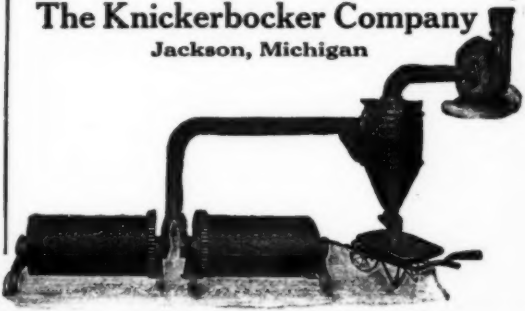
As to the "plus" referred to above, we call your attention to the fact that with the "Rarefied" repairs are reduced to practically nil. One user had no repairs whatever after three years' steady use. This is because there's no abrasion of fan parts, and hardly any wear from internal friction, as the dust is collected and automatically discharged before the air reaches the fan.

Our interesting Booklet gives full details as to "how" and "why"

Write for your copy today

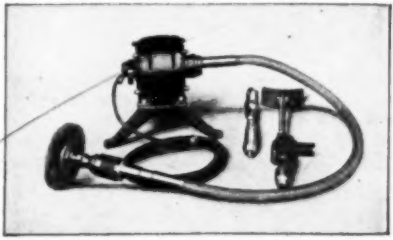
The Knickerbocker Company

Jackson, Michigan



The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



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Stow Flexible Shaft Co., 3454 Ludlow St., Philadelphia, Pa.

The Best Since 1876

Steel Bearing Balls

Brass, Bronze, Aluminum and Monel Metal Balls

Steel Burnishing Balls

Burnishing Cones

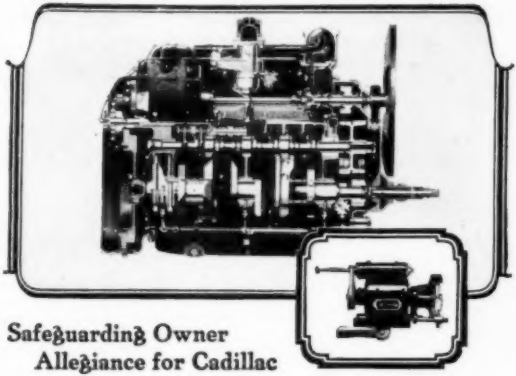
Burnishing Pins

Immediate Shipments from Stock

Ask for Price List 23-H

The Abbott Ball Company

Elmwood District, Hartford, Conn.



Safeguarding Owner Allegiance for Cadillac

CADILLAC'S endorsement by those it serves is a precious thing. So Cadillac's production is necessarily safeguarded by the most exacting standards. That Dumore grinders are to be found among the precision tools directly responsible for the famed close limits of Cadillac production is a splendid endorsement of their worth.

Unlike Cadillac, perhaps, your requirements do not call for limits as close as .0001. Nevertheless, if you make jigs, dies, gages and other hardened tools, you can use Dumore grinders to advantage. Six styles and sizes—with individual speed ranges—provide a grinder with the correct cutting speed for any grinding need. Dynamic balance and smooth operation of Dumore grinder motors eliminate vibration. Ability to operate on alternating or direct current assures constant usage even in shops supplied with two varieties of power current. Portable, they can easily be taken to the job—saving the cost of tearing down expensive set-ups.

A word to us will bring further facts that show why these sturdy tools are so desirable to own. Why not send for this data and our new catalog today?

Wisconsin Electric Co., 43 Sixteenth St., Racine, Wis.

DUMORE HIGH SPEED GRINDERS

ARMSTRONG

GANG PLANER TOOL

For Planing Large Surfaces

It pays for itself in a few hours' work. In planing large castings it saves 50 to 75 per cent of time required with a single-point tool—a most pleasing economy.

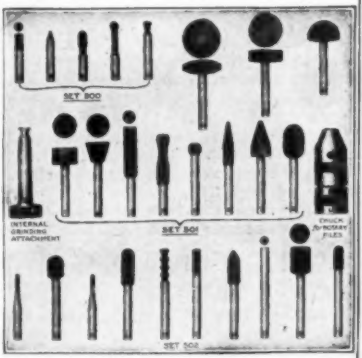
Write for Catalog of over 100 shapes and sizes of Lathe and Planer Tools: also separate Catalogs of Armstrong Rachet Drills, Wrenches, and Dogs and Clamps.

Armstrong Bros. Tool Co.

"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

HIGH SPEED HAND CUT ROTARY FILES



Strand

Rotary Files

Used with Strand Flexible Shaft Machines. Are giving excellent service.

Write for Catalog

N. A. Strand & Co.
5001 No. Lincoln St
CHICAGO

La Salle Grinders

American Style C T A
For Dry Grinding Only

Unexcelled as a dry grinder for twist drills. Extra large drill holder has capacity from 1" to 3½".

American Style W T A is arranged for both wet and dry grinding.

All American Grinders are now equipped to handle taper shank drills.

No. 1 Plain and Surface Grinder

(Micrometer Adjustment)

Grinding wheels	8"x1"
Between wheels	15"
Height to spindle center	40"
Table surface	8"x14"

Has vertical travel of 12" on guides, ¾" by micrometer, and may be raised to within 2" of spindle center. Wheel grinds to center of a surface 9" wide.

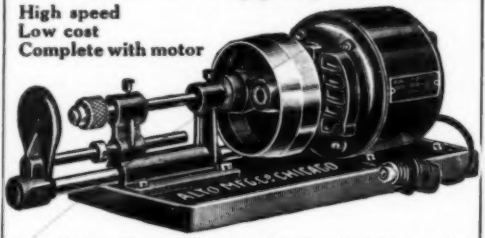
Let us know your grinding requirements

LaSalle Tool Company

LaSalle, Illinois, U. S. A.

Alto Motor Driven Tapping Machine

High speed
Low cost
Complete with motor



Furnished complete with motor. Reverses three times as fast as forward movement. Its simple, compact, positive construction enables us to offer it at a low price. Capacity, 3/16" in brass, 1/8" in steel. ***Write for description and price.***

The Alto Mfg. Co., 1647-51 Wolfram St. Chicago, Ill.

Walton Tap Extractor Stops Costly Leaks

It's bad enough when a tap breaks—you shouldn't add to the expense by having your men spend a lot of time digging out the pieces.

When you have a Walton it takes but a moment—just slip the fingers of the tool into the flutes of the broken end, give it one or two sharp turns, and the piece is out. No damage to the threads, either. Sizes No. 8 to 1¼".

Shipped on 60 days' approval

Do we hear you say "ship"?

The Walton Company
Hartford, Conn.

PEERLESS

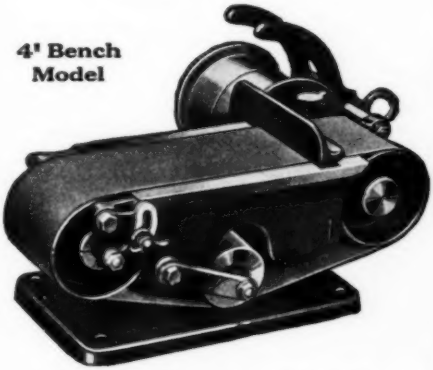
SURFACING MACHINES

for

Grinding and Finishing

Flat Work

4' Bench Model



Larger Machines in Both Horizontal and Vertical Styles

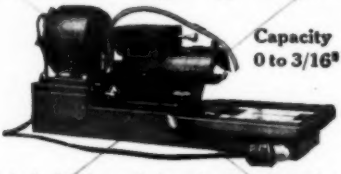
SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.

TROY, N. Y.

BICKNELL-THOMAS

Friction Tapping Machine



Capacity 0 to 3/16"

The most simple, durable, completely equipped, compact, easiest operated and most productive bench tapping machine built. The cone friction drive is automatically adjusted by the pressure the operator puts on spindle, making an extremely sensitive drive, saving time and taps and increasing output. Furnished for either direct or alternating current.

You should have specifications; may we send them?

Bicknell-Thomas Company
90 Wells Street, Greenfield, Mass.

The Positive Elimination Of Tap Breakage

Long looked for, but seemingly impossible of attainment until the advent some nine years ago—of the

Woodstock Improved Safety Tapping Chuck

Releases the tap automatically the instant it binds or strikes bottom. Utilizes up to 95% of strength of tap, with positive assurance it will not break. Easily adjusted. Saves taps, time, temper and labor. Five sizes.

Let us send you one on trial

Peter Bros. Mfg. Co., 115 Railroad St., ALGONQUIN, ILL.

Why Continue The Waste?

The "Good Enough" of Yesterday
HAS BEEN OUTCLASSED
In Methods for Truing Grinding Wheels

The largest factories in the U. S. are adopting our truing tools and are saving at least one-half of their former diamond cost.

You Can Do the Same

Any good mechanic can use these tools successfully by following the simple instructions.

The Saving is Worth While

The tools are not an experiment, as one concern has several hundred of them in use every day and there are scores of concerns using them on their best work.

BETTER—FASTER

and Decidedly Less Cost

Ask us for information

The Precision Truing Machine & Tool Co.
CINCINNATI, OHIO

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"

are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

Send for Catalog "F"

The N. P. Bowsher Co., South Bend, Ind.

Anderson IMPROVED Ever-Ready Balancing Ways

Balance 'most anything that revolves

Extremely sensitive. Discs accurately balanced. Always ready—need no adjustment—no leveling needed—no centers required. Last indefinitely. The hardened spindles hold their accuracy—don't become indented with ordinary use. Six sizes.

Get the folder and close price.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bead	Bid	Bis	Bib	Ben	

Any of above can be furnished with longer shafts

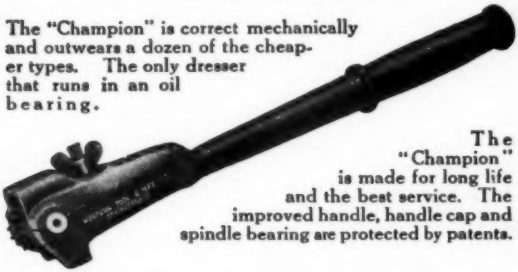
Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

"Champion" Emery Wheel Dresser

Made by Specialists

The "Champion" is correct mechanically and outwears a dozen of the cheaper types. The only dresser that runs in an oil bearing.



The "Champion" is made for long life and the best service. The improved handle, handle cap and spindle bearing are protected by patents.

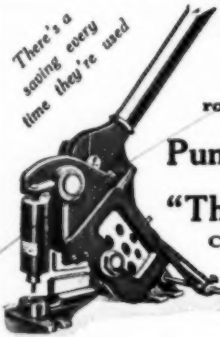
We suggest that you write for our Catalog, which explains in detail the many excellent features of this highly improved Emery Wheel Dresser. Those who are using it would never be without it, and we want you to know why it has proven so satisfactory everywhere.

Our Catalog also describes

Champion Tool Holders for practically all purposes, Expanding Mandrels, Machinists' Vises and Clamps, etc., and our large line of Champion Shop Furniture.

Your copy of Catalog is ready to mail
How shall we address it, please?

The Western Tool & Mfg. Co.
Springfield, Ohio



It Costs Less To Cut

rounds, squares, flats
and to

Punch Those Holes

on

"The Bench" No. 3

Combination Shear,
Rod Cutter & Punch

CAPACITY 5/8"

$45.00 f. o. b. Phila.

THE BENCH MACHINE TOOL CO.

Makers of "THE BENCH" Tapping Machines

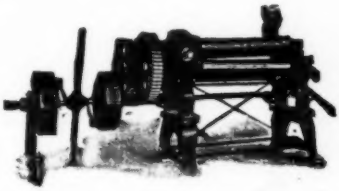
222 N. 13th Street, Philadelphia, Pa.

SOMETHING NEW

Hand Power Presses, Shears, Notchers, Punches and Dies, Etc.

Write for Booklet

J. F. Kidder Mfg. Co., Burlington, Vt.



BELOIT

INITIAL TYPE

Sheet & Plate Bending Rolls

The Beloit Initial Type Rolls are built in a large number of sizes and capacities, and for a great variety of work.

The modern design of the Beloit Rolls of this type makes it possible for the operator to curve plates completely to the edge, thus getting away from the undesirable flat near the edge of the sheet.

The quick-acting cam lever device raises the top roll for the removal of completed cylinders.

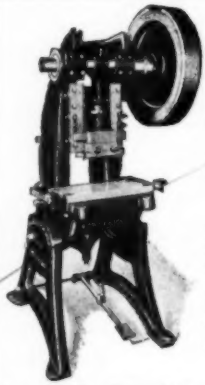
Individual and simultaneous adjustment of both ends of the forming roll can be furnished, and the machine can be arranged for third roll drive, when necessary.

Those in the market for Bending Rolls cannot afford to fail to give us their specifications, and to get our quotations.

We solicit your inquiries for Bending Rolls, either Initial Type as shown above, or the Pyramid Type machine, as well as for Punching and Shearing Machinery, both hand and power.

Hendley & Whittemore Co.

100 S. State St., BELOIT, WIS.



Trade **Verson** Mark

No. 3 O. B. I. PUNCH PRESS

Weight 2200 lbs.

Standard Equipment Includes the Following Features:

Non-Repeat Safety.
Safety Lock for use while setting dies.
5-Inch Jaw Clutch.
2¾" Diam. Crankshaft.
Ball Socket Slide Connection.
Cross Bar Knock-out.
Hand Wheel Inclining Attachment.

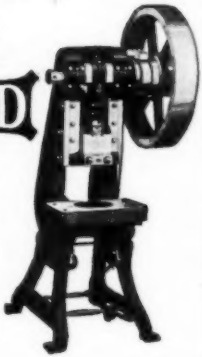
Wire for Catalogue

La Salle Machine Works 3013 S. La Salle St., CHICAGO, ILL.

There with the Punch

Great Power backed by heavy rugged design enable

HIGH DUTY
ROCKFORD
PUNCH PRESSES



to out-punch and out-work any press of their capacity.

Their punch-ability and accuracy will surprise you.

Write for catalog

Rockford Iron Works
ROCKFORD, ILL.

Spring Press

(UNIFORM BLOW)

Foot or Power

Single and Double Action

These new Presses are used in large numbers by manufacturers of electrical devices, jewelry, cutlery, hardware, clocks, radio sets, toys, instruments, etc.

The Uniform Blow a special feature—increases production and eliminates costly inspection.

The Taylor & Fenn Co.

Hartford, Connecticut, U. S. A.

The Economy of Peter's Metal Cutter is

75% Greater than Hack Saw or File

Always ready to make a thin, smooth, square cut in hard steel, forming tools, drills, reamers; also tubes, rods and bars of copper, brass and aluminum. Cuts h. s. steel without burning or drawing of temper.

8" Size $22.50, with C. S.
Splendid for tool room. Cuts all high-speed steel up to ⅝" square.

12" Size $60, with C. S.
Cuts up to 2¼" diameter, round or square, at any angle up to 45 degrees. Ball bearing.

15 Days' Free Trial

Write us or ask your dealer

PETER BROTHERS MFG. CO.
115 Railroad St., Algonquin, Ill.

This Free Chart

The Correct Guide in Cutting

Your request on your letterhead will bring this authoritative chart.

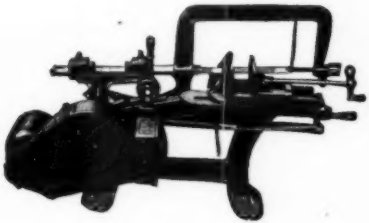
RACINE "JUNIOR"

Portable High Speed Metal Cutting Machine, easily moved to any location near electric light socket. Smooth, vibrationless, need not be bolted to floor. Normal capacity 0 to 4".

Use "Racine" H. S. Wood and Metal Band Saw Blades & "Racine" H. S. Tungsten Power and Hand Hack Saw Blades. *Catalog H.*

Racine Tool & Machine Co.
1429 Junction Av., Racine, Wis.
"STANDARD THE WORLD OVER"

A Complete Motor Driven Hack Saw at a very attractive price. It's a Strong, Durable, Dependable Saw, and can be furnished either with motor for power circuit for stationary use, or with motor for lighting circuit so can run from any light socket in your shop. Write us. Let us know the current of your power circuit, or lighting circuit. Get the full details from us of this Complete Motor Driven Saw.



Marvel Draw-Cut Hack Saw No. 2

Adjustable Stroke

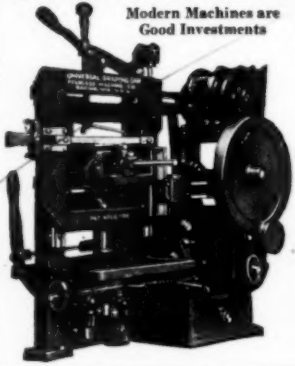
CAPACITY { 6"x6" on long stroke
8"x8" on short stroke

With Swivel Vise

Motor is connected with driving shaft by silent chain, sprockets, and intermediate cut gears enclosed in cast iron housing and guard and run in oil.

ARMSTRONG-BLUM MFG. CO.
341 N. Francisco Ave., CHICAGO, ILL.

—PEERLESS—
UNIVERSAL SHAPING SAW



Modern Machines are Good Investments

Latest and Most Efficient in Hack-saws Faster — More Accurate and Economical

REDUCES
Cutting Time
Wasted Material
Blade Expense

ELIMINATES
Semi Finishing Jobs

Cap. 6"x6", 9"x9", 13"x13"

PEERLESS
HIGH SPEED HACK-SAWS
6"x6" 9"x9" 13"x16"

Sturdy--Efficient--Reliable

Peerless Machine Co.
1609 Racine St.
Racine, Wisconsin
Write for Details

"Bridgebilt" Factory Seating and Tool Racks

A diversified line to meet requirements of every branch of industry.

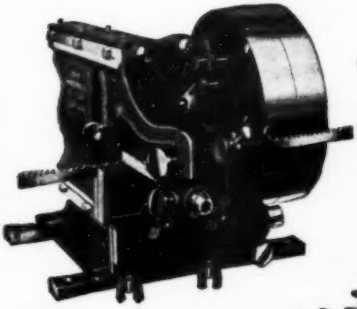
The Bridgebilt line will give long and satisfactory service

For illustrated price list and discounts write—

The Chicago Wire Chair Co.
619 No. LaSalle St., Chicago, Ill.

No. 1010-SWS

Don't junk your hard edged saws



Model K-2

IN ONE OPERATION

Files and Sets Medium, Spring or Soft Tempered BAND SAWS

Used by over 100 large Foundries and Body Builders

Model A-2

Sharpens and Salvages HARD Medium or Soft Tempered BAND SAWS

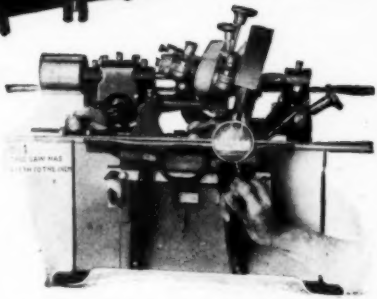


FIGURE YOUR SAVING WHEN THESE MACHINES WILL SHARPEN A SAW FOR 5 CENTS

Write for FREE booklet

We also make Circular Saw Filers & Grinders

THE WARDWELL MFG. CO.

108 Hamilton Ave., CLEVELAND, OHIO

Be sure the letter (W) is on all your punches and dies. They are made in our own factory and are genuine.

ORIGINATORS WORLD'S LARGEST BALL BEARING PUNCH AND SHEAR MANUFACTURERS

Write for Prices

WHITNEY METAL TOOL CO.

95 Forbes St.

ROCKFORD, ILL.

T.H.L. Front Lever Bench Punch

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE $45

Extra Punches, 20 cents each; extra dies, 30 cents.

Capacity 13/32" thru 1/4" steel, 11/32" thru 5/16". Punches up to 1/2". Weight, 70 lbs.

A good buy; can ship promptly

T. H. LEWTHWAITE MACHINE CO.

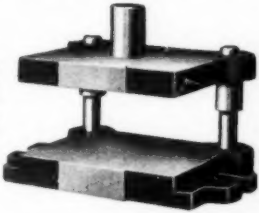
(Est. 1890)

417 E. 31st St., NEW YORK

DANLY STANDARD

The Key to Lower Stamping Costs

Every known refinement in design, materials and workmanship is used in Danly Die Sets. Each is a precision tool.



There is a Danly Die Set for every need —12 types and 97 different sizes.

Danly Die Sets, completely assembled or in the "knock down" save 20 to 50% in first cost. They eliminate trouble, inconvenience and delay, since they are ordered from the Danly Catalog by type and number. Danly Die Sets lower stamping costs enormously because they eliminate shearing of dies, increase the "pieces per grind" 500 to several thousand per cent; reduce set-up time 75% or more; reduce the depth per grind about 50 to 80%; and produce more accurate stampings.

Immediate shipment from stock
Write, wire or 'phone nearest office.

Danly Machine Specialties, Inc.

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Compact—Sensitive—Accurate—Durable

The "ATLAS JUNIOR" INDICATOR

Reads over a range of 0.055"—at a glance. Dial may be set at zero after adjusting to work. Contact point can be locked in position for inspecting. Keep it in your pocket and use it anywhere. Details?

PRICE $7.50

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Model "25"

In a Leather Case with Universal Attachments

Only $10.

On a Surface Gauge

FEDERAL Dial Indicator

Adjusts instantly to any desired position on a surface or height gauge; also for checking lathe, miller, grinder, shaper or planer work.

Send for our complete catalog of Dial Indicators, Cylinder Gauges, Comparators, Thickness Gauges, Piston Gauges, Rubber Gauges, Piston Pin Gauges, Fabric Gauges, Paper Gauges, Wire Gauges, Piston Ring Gauges, Thread Lead Gauges.

Federal Products Corporation

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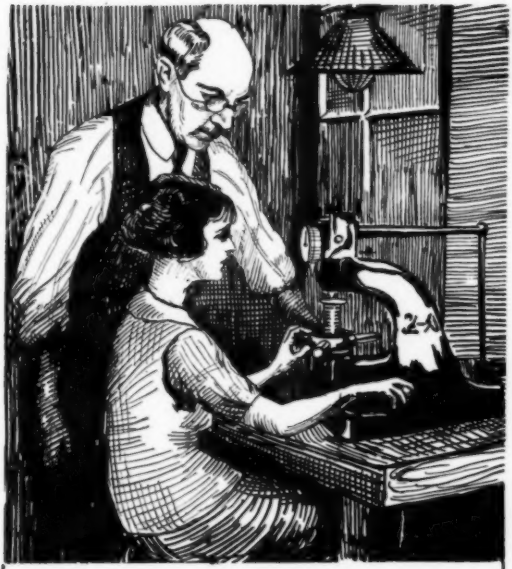

Its easy to teach girls to make inspection hardness tests on

ROCKWELL HARDNESS TESTERS

After an hour's instruction a girl can make just as reliable tests, and probably more of them a day, than a skilled man.

Girls are operating the Rockwell in hundreds of plants.

Find your improperly hardened parts yourselves. Don't lose your reputation for good work by letting some other department or your customer discover them for you.

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New Designs May Come and Go

But the old established line of practical lubricant saving, bearing life giving

Tucker Oil Hole Covers Go on forever.

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FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
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Style "WC"

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Gits Gravity and Wire Wick Feed Oilers

Gravity Feed—flushes the bearing.
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Wire Wick—replaces waste or felt.
Made in Standard sizes.

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Showing 255 full size illustrations with detail dimensions.

GITS OIL CUPS

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Oil cups for every lubricating need. State style and size in which you are interested, and we will send free samples and catalog.

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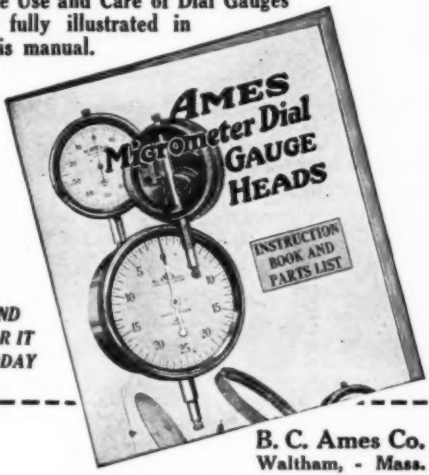
Send for This FREE Text Book

the Use and Care of Dial Gauges is fully illustrated in this manual.



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Please send me a free copy of the DIAL GAUGE INSTRUCTION BOOK

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Tolhurst Chip Wringers reclaim 6 to 15 gallons per load and handle three or four loads per hour.

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TOLHURST MACHINE WORKS
TROY, N.Y.

Reclaim Your Oil And Save Money

No. 500—Capacity: 1.7 Bushels

It's Simple Arithmetic

The saving in 20 installations averaged 2.17 gallons of oil per 100 lbs. of chips, after draining.

The Curtis Oil Extractor

shown in the picture, holds about 250 lbs. of chips. Figure for yourself the oil saving from each full load. *It's a safe investment with amazing returns.*

The Curtis Centrifugal Oil Extractor is made in two sizes, belt or motor drive. The illustration shows our larger size, with motor on spindle.

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The Leon J. Barrett Co., Worcester, Massachusetts

Successors to Curtis Machine Co.

Money Makes Money When Wisely Invested

Money is plentiful. Interest rates are low.

Why not invest some of this cheap money where it will earn a better return than a low interest rate? Invest it in profit making modern machine tools.

If you haven't the money yourself, now is the best time to borrow it from those who have a surplus to lend.

It is a legitimate, wise, and worthy basis for a loan to use the money borrowed to replace obsolete and wasteful equipment with modern

MACHINE TOOLS—
The Master Tools of Industry

NATIONAL MACHINE TOOL BUILDERS' ASSOCIATION

"Gusher" MOTOR DRIVEN Pumps

—are made to meet all conditions. Where it is impracticable to submerge the pump in the reservoir of the machine, you can mount a "Gusher" outside of the reservoir and connect by piping.

"Gusher" Pumps

are made in several sizes to deliver from 3 to 30 gals. per minute, and furnished with individual motors for any electric current. Made to stand hard work, they give the highest efficiency with the least power on all grinding and automatic machines.

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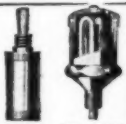
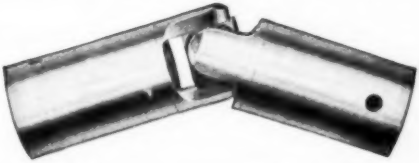
Empress Oil Cups and Grease Cups



The Empress line of grease and oil cups is complete; it consists of over fifty different types in several sizes. Write for Booklet No. R-103, it gives full data. A cup for every purpose.

Bowen Products Corporation
Auburn, New York

NATCO
Universal Joints



Of Proven Service

Made from Alloy Steel.

All working surfaces hardened and ground to insure maximum life.

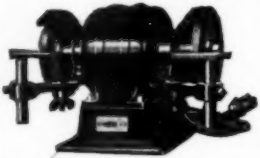
Interchangeable manufacture permits repair parts replacement to overcome natural wear. Complete replacement is seldom necessary.

Manufactured in the following sizes—
5/8", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3".

Descriptive Bulletin will be sent on request.

The National Automatic Tool Co.
Richmond, Indiana

The 8 Outstanding Advantages



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BODINE
Portable Electric
TOOL GRINDERS

are for your benefit.

BODINE-BUILT Grinders increase production by making it easy for your workmen to keep the keenest edge on their cutting tools. They are unexcelled in sturdiness, general efficiency and safety.

Their "Eight Outstanding Advantages" are real factors in the all-around superiority of Bodine Grinders.

Write for a copy of "*Eight Outstanding Advantages.*"

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2256 West Ohio St., Chicago, Ill.

Vanderbeek Universal Joints

—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

Write today for our Descriptive Catalog.

American Tool Works, Inc.
Hartford, Conn., U. S. A.

Curtis Universal Joints

Stand Every Test

Simplicity of ***Construction***

coupled with absolute perfection in every manufacturing detail characterizes Curtis Universal Joints.

That's why they are known everywhere as joints of exceptional

Reliability and ***Strength***

Stocked in Standard Sizes at
22 Distributing Points Throughout the Country

IMMEDIATE DELIVERY ANYWHERE

Send for Latest Catalog

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NATIONAL HEADQUARTERS

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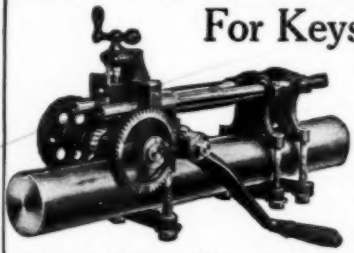
BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

Don't Dismantle Shafting For Keyseating



The BURR Portable Keyseater

Cuts accurate keyways up to 12" long anywhere, in any position, in shafts up to 5" diam. Often saves its cost on a single emergency job. You should have one on hand.

Thoroughly Tried—Over 9,000 Already In Use

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

Happy Days

Now Looking

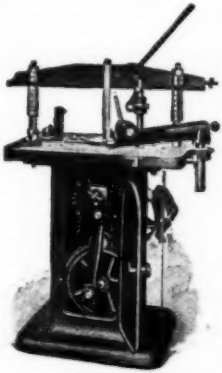
Forward

This Keyseating Miller relieves the unsettled mind. Jobs that have been worried over and gave one considerable thought can now be performed with ease.

Ask for Catalog O

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.



Keyseating

Every shop has more or less keyseating to do, and in every shop where the—

"Davis"

—is used, their keyseating is done quickly, accurately, economically, and with great satisfaction.

Sample of Cutting Time on Gears

Size of Blank	Kind of Stock	Size of Keyway	No. at 1 Chucking	Cutting Time
3¼"x¾"	Steel	3/16"x3/32"	3	1 min. 30 sec.
6¾"x1⅞"	C. Iron	¼"x⅛"	1	20 sec.
2 5/16x9/16"	Steel	¼"x⅛"	4	40 sec.
3"x4¾"	Steel	5/16"x5/32"	1	1 min. 40 sec.
3"x7/16"	C. Iron	⅛"x1/16"	4	30 sec.
Oil Groove	C. Iron	⅛"x2⅞"	1	30 sec.

THE "DAVIS" is made in two sizes to cut 1/16 to 1-inch keyways in pulleys, gear blanks, bell cranks, crank handles, etc.. etc., and for slotting, oil grooving and work of a similar nature. It is simply designed, ruggedly built, easily handled and a big producer. Can equip for motor drive.

If you do keyseating, let us send you the folder

Davis Keyseater Company

255½ Mill St., Rochester, N. Y., U. S. A.

Faster and Better Riveting

On a NOISELESS Machine

Speed: A rivet a second.

Quality: The heads are perfectly formed and highly polished, without hammer or tool marks. Simple adjustments give whatever degree of tightness or flexibility is desired.

Noiseless: The "GRANT" rolls or swedges the rivet shank. There are no blows. Therefore, it makes no nerve-racking noise.

Write for Catalog and send us some of your most difficult work for riveting

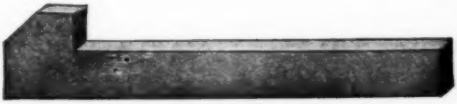
The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

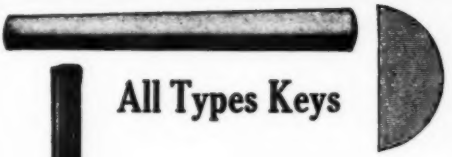
Give Us A Trial

On your next order for Hollow Bored Forgings and Steel Shafts

When it comes to furnishing such items as ***Lathe Spindles, Piston Rods, Rams, Clutch Shafts,*** etc., you will find us a reliable source of supply, with dependable products, prompt deliveries and the right prices. If there's anything you need now, send along your blueprints and we'll take good care of you. Thank you.

American Hollow Boring Co.
Erie, Penna.





All Types Keys

CRANKSHAFTS
Forged or Finished

CONNECTING RODS
Forged or Finished

MACHINE KEYS
Quick delivery—ready to drive

WOODRUFF KEYS
Ship from Stock

TAPER PINS
Ship from Stock

Send us your inquiries

Wm. Leard Co.
6th Ave.
New Brighton, Pa.

Faster and Better Riveting

On a NOISELESS Machine

Speed: A rivet a second.

Quality: The heads are perfectly formed and highly polished, without hammer or tool marks. Simple adjustments give whatever degree of tightness or flexibility is desired.

Noiseless: The "GRANT" rolls or swedges the rivet shank. There are no blows. Therefore, it makes no nerve-racking noise.

Write for Catalog and send us some of your most difficult work for riveting

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C. E. Station, Bridgeport, Conn.

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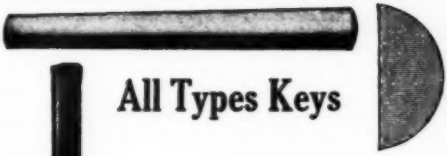
When it comes to furnishing such items as ***Lathe Spindles, Piston Rods, Rams, Clutch Shafts,*** etc., you will find us a reliable source of supply, with dependable products, prompt deliveries and the right prices. If there's anything you need now, send along your blueprints and we'll take good care of you. Thank you.

American Hollow Boring Co.
Erie, Penna.



All Types Keys

CRANKSHAFTS
Forged or Finished

CONNECTING RODS
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MACHINE KEYS
Quick delivery—ready to drive

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Send us your inquiries

Wm. Leard Co.
6th Ave.
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Jacobs Chuck

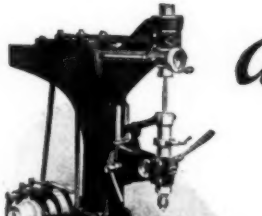
Ball B

Avey Sensi

The AVEY Line in
and bench, to hand
the smallest size to

Avey N

This modern bench
embodies the corre
rigidity and lack of
to 12,000 r. p. m., l
and smaller in cast



JACOBS CHUCK furnished as regular equipment on this Avey Sensitive Drilling Machine.

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THE AVEY DRILLING MACHINE CO.,

This advertisement is
interests of good Drilli
by the makers of the Ja

High-grade tools are high-

Jacobs Chucks

Ball Bearing, High-Speed

Sensitive Drilling Machines

EY Line includes a score of different sizes and types, column ch, to handle all classes of high-speed sensitive drilling from llest size to 1¼". The illustration shows the—

Avey No. ½ Bench Drilling Machine

dern bench drill is made in units of one to six spindles, and s the correct principles of ball bearing mounting, lubrication, and la of vibration. Recommended for spindle speeds up r. p. m., but tested up to 18,000. For drilling holes 3/16" ller in cast iron. Also furnished in column type.

the complete AVEY illustrated Catalog, write to—

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e high-grade investments

Thor Electric Drills—

Use It Anywhere!

JUST plug in on the lighting circuit and the THOR Portable Electric Drill is ready for use. Take the THOR right to the job. No need to carry the work back and forth. ¶ You'll find an unusual combination of power, speed and durability in a THOR. ¶ Built throughout with rugged, easy running parts, THOR Drills are designed for drilling, reaming, wood-boring and screw driving. Jacobs Chucks are regular equipment.

A THOR will save you money. Write today for our new illustrated catalog. It describes the complete THOR line. No obligations.

Independent Pneumatic Tool Co.
600 W. Jackson Blvd., Chicago, Ill.

The name

"Hardinge"

Stamped on any piece of machinery is a guarantee of quality and workmanship. This is particularly noticeable in the manufacture of

Collets

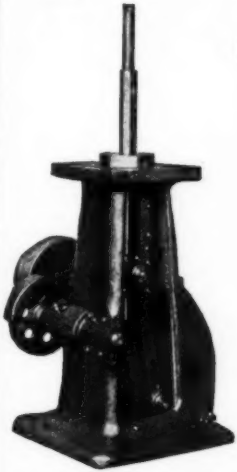
where so often extreme accuracy is required. When you need something special in this line that no other firm will touch, try—

Hardinge Brothers, Inc.

4149 E. Ravenswood Ave., Chicago, Ill.,

Collet Specialists for thirty years.

The CATLIN—Simplest Keyseater in the World



Faster Keyseating
Cheaper Keyseating
Accurate Keyseating
Simplest Operation
Greatest Durability

Has less than half the number of parts of other keyseaters.

Either direct-connected motor or belt drive.

A size for every class of work.

So simple in construction, so rapid in operation, and withal so durably built, that the Catlin is easily the most efficient and economical Keyseater made today.

The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically every modern keyseating requirement.

We invite your inquiry. Glad to mail you a partial list of big plants now using CATLINS

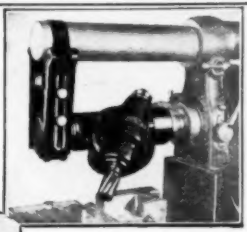
Chattanooga Machinery Company

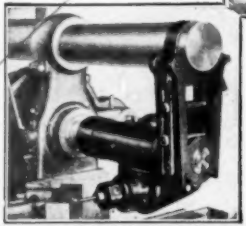
2401 Bennett Ave., Chattanooga, Tenn.

Reduce Set-ups on intricate work with the

New Hevy-Du-T

Universal Milling Attachment



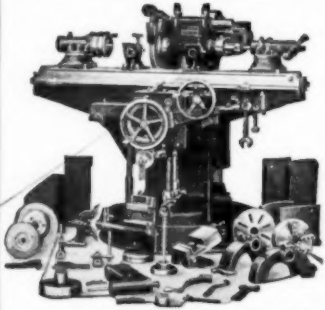


Allows the spindle to operate at any angle in any plane. On or off in three minutes. Think of its many uses, then write for details.

PORTER-CABLE MACHINE CO.

Salina St., Syracuse, N.Y.

No More Dull Tools—



Where the up-to-date, improved

Thompson Universal Grinder

in used. Does practically all kinds of grinding quickly and accurately—plain, surface, edge, die, cutter and internal. Capacity is 10"x36".

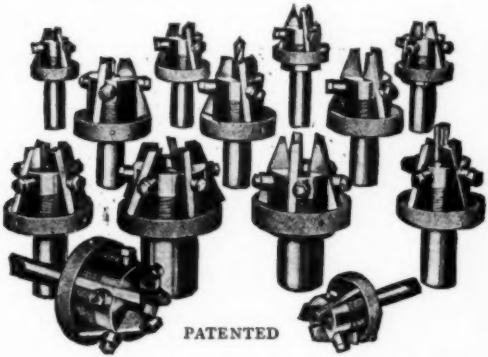
Write for Bulletin and prices today

Manufactured By

THE THOMPSON GRINDER CO., - Springfield, Ohio

Genesee Adjustable Hollow Mill

Having Adjustable, Replaceable Blades, Which Can Be Replaced At Nominal Cost, it Becomes Unnecessary to Continually Buy New Tools



Genesee Adjustable Hollow Mills

Are the Ideal Tools for Finishing
Your Forgings, Castings, Etc.

Genesee Adjustable Hollow Mills can be adjusted to the 1000th of an inch in a few minutes and are designed to utilize machines to their full capacity.

Genesee Adjustable Hollow Mills can be fitted with drills and reamers, have formed blades, etc. Blades can be ground any angle to point work and turn short tapers. Let us mail you full particulars.

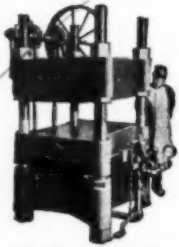
Genesee Manufacturing Co., Inc.

Rochester, N. Y., U. S. A.

Manufacturers of Genesee Rapid Production Tools. ***Est. 1908***

Do You Know

That Hydraulic Presses Can Be Made To Operate As Fast As Geared Presses?



WE SPECIALIZE—

on Quick-Acting Presses with Automatic Control.

WE BUILD—

Presses in Any Size and for Any Purpose Requiring Pressure.

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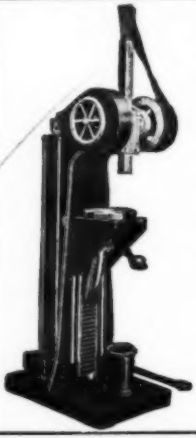
LOURIE MFG. CO., Springfield, Ill.



Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

Write for our Bulletin—showing 30 different sizes

Atlas Press Co.

Department B,

Kalamazoo, Michigan

The Old Way

Results in damaged shafts, bushings, pins and other parts, as well as accidents to the workmen.

With Nicholson Arbor Presses

all of these losses and accidents are eliminated, and considerable money is saved. Made in five sizes that take work up to 20" in diameter and 31" high and exerting pressures up to 9,000 lbs. Can make immediate delivery on all sizes and will be glad to send any size on trial.

Nicholson Expanding Mandrels

Save space—A set of nine does the work of several hundred solid mandrels.

Save time—Instantly fit any hole, round or square, from ½" to 7".

Save labor—No need to caliper a dozen or so solid mandrels, or turn one down to fit certain job.

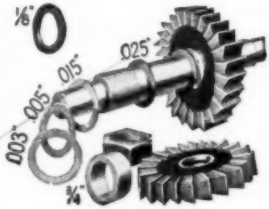
Write for literature and 30-day trial plan

W. H. Nicholson & Co.

117 Oregon St., Wilkes-Barre, Pa.

Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4, 1 3/8, 1 1/2, 1 5/8, 1 3/4, 1 7/8, 2, 2 1/4, 2 1/2, 3, 3 1/2 and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company

3443 West Fort St., Detroit, Mich.

Save Time Setting Gang Milling Cutters

Eliminate Thin Washers

Hardened and Ground

PATENTED

"Wear-Ever" Adjustable Spacing Collars permit setting cutters to the thousandth part of an inch without removing from the arbor.

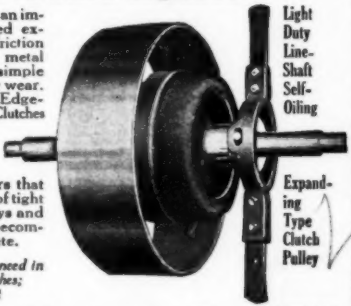
Stock sizes for 3/4" to 2 1/2" arbors, sent on approval They are adjustable in 12 steps of 2/1000 inches

SCULLY-JONES & CO. *TOOL DIVISION*
13th and Robey Streets **CHICAGO, ILL.**

Edgemont Friction Clutches
For All Purposes

This clutch has an improved patented expanding type friction with metal to metal contact, with simple adjustments for wear. The value of "Edgemont" Friction Clutches on line shaft has been so universally acknowledged by mill operators that the old system of tight and loose pulleys and belt shifting is becoming quite obsolete.

Tell us what you need in Friction Clutches; we have it



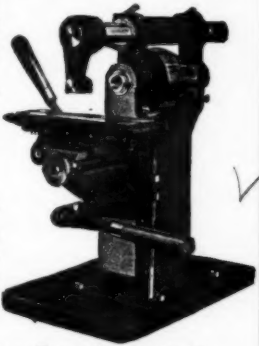
Edgemont Machine Co., Inc., DAYTON, OHIO

The BURKE No. 3 Miller

Bench Type.....$155.
Column Type ... $171.

Longitudinal feed, 8 in.
Traverse feed, 3⅜ in.
Vertical feed, 7½ in.
Table surface, 3½x12 in.

BURKE Bench Millers are built in various sizes, both power and hand feed, priced from $100 to $220. They are unexcelled on small milling operations.



You'll like Burke Millers; we'll appreciate your inquiry

The Burke Machine Tool Co.
297 East 16th St., Conneaut, Ohio

Rigidity—Power—Economy

Type BB

Are combined in our up-to-date, covenient

One-Man Four-Post

Screw Press

—delivering 80-Tons Pressure

Your tool maker requires ***no help*** in handling any dies. Machine is sensitive, rigid, powerful. Perfect alignment of punch and die is assured. Abundant room between bed and ram. We also make three smaller sizes. Table of Type BB is 20"x36".

A Surface Grinder

that's a revelation in quiet efficiency. Its rigidity insures accuracy. Has non-vibrating wheel. Both feeds have graduated dial.

Let us send folders and prices

JARECKI MACHINE AND TOOL CO.

Successor to Manhattan Machine & Tool Works

Dept. A. GRAND RAPIDS, MICH.

Second-Hand Machinery

Lists of Second-Hand Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published under this heading at the rate of **30 cents a line**, across the page, each issue, plus **$2.50** for name and address. Minimum charge, **$5.00.** No display permitted in this department.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool Blue Book advertisers.

Circulation of Machine Tool Blue Book, 25,000.

FOR SALE BY

Nelson Machinery Co., - 123-131 N. Pearl St., Green Bay, Wis.

Boilers, State inspected, all sizes and types complete.
Circular metal saw, Smith & Coast, $75.
Electric motors and engines, guaranteed rebuilt.
Lathe, 36"x18' Niles-Bement-Pond.
Shaper, 16" Ohio heavy duty crank.

FOR SALE BY

Botwinik Brothers, - 67 Water St., New Haven, Conn.

MILLING MACHINES

15 Hendey No. 2½ Lincoln type milling machines, complete with arbors, shafts, etc.; good working condition. Price $100.00 each, net, f. o. b. cars, New Haven, Conn.

Wire, write or phone.

FOR SALE BY

The Patterson Tool & Supply Co., - - - Dayton, Ohio

Grinder, 14"x48" Modern cylin..$500.
Grinder, No. 2 Amer., surface.. 375.
Grinder, Steel Products, gauge.. 250.
Lathe, 13"x6' Willard, with ck.. 175.
Lathe, 16"x6' Monarch ..... 225.
Lathe, 18"x8' Greaves-K.....$250.
Mill, No. 25 Becker plain..... 275.
Mill, No. 7H Becker, Lincoln... 150.
Turret lathe, 15" Dreses..... 125.
Turret lathe, 18" Dreses..... 200.

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Drill, 32"Aurora, motor driven, tapping attachment.
Drill press, 24-spdl. multiple Natco, motor driven.
Drill press, D-1 Colburn heavy duty.
Flat turret lathe. 2"x36" Jones & L.
Grinders, foundry, Norton heavy duty, (2).
Hammer, 100 lb. Massillon, steam.
Lathe, 22"x11' Lehmann, geared head, taper attachment.
Lathe, 22"x12' Mueller.
Lathe, 24"x12' Schumacher & Boye.
Lathe, 26"x21' Whitcomb-B., mtr.dr.
Lathe, 36"x15' L. & S., taper attach.
Lathes, extension bed gap, 25"—45"x14' Harrington, motor driven.
Miller, No. 3 Kempsmith universal.
Millers, Gould & Eberhardt continuous, (2).
Planer, 54"x54"x14' Pond Machine Tool Co., two heads.
Planer, 36"x36"x12" Woodward & Powell, motor driven, 3 heads.
Pipe machines, 2", 4", 6", 8" & 12" Oster, Cox, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, complete stock.
Press, No. 54 Toledo gr. str. side.
Presses, Nos. 18, 19 and 20 Bliss.
Punch and shear, No. 3 Hilles & J., dbl. end, motor dr.; punch end, 42" thrt., cap. 1½" thru 1"; shearing end, 36" thrt., cap. 1" plate, 2½" round, 7"x1½" flat, 5"x5"x⅞" angle.
Punch and shear, Pels combination; punching cap. 1" thick; shearing, 2" rd., 2½" squares, 6x6x⅞" angles.
Radial drill, 36" Gang.
Radial drill, 5' Mueller.
Shapers, 12", 14", 16", 21" and 24" stroke, assorted makes.
Turret lathe, No. 6½ Bardons & Oliver, 2½" w. f. cap., cabinet base.

SECOND-HAND MACHINERY

FOR SALE BY

Cyril J. Bath & Co., 6900 Machinery Ave., N. E., Cleveland, O.

BORING MILLS—VERTICAL.

42" Baush, 2 swivel heads, 75%.
7' Betts, double head, 85%.
60" Colburn, rapid traverse.
60" Niles, 2 swivel heads and one internal boring head.

BORING MILLS—HORIZONTAL.

No. 21 Lucas, table type, 75%.
No. 36 Landis, floor type, 3½" bar, 80%.
No. 35-A Landis, floor type, horizontal, 90%.

DRAW BENCHES.

15,000 lbs. to 25,000 lbs. Waterbury-Farrel, United Engineering and Standard; 20" draw, with 18' extensions for mandrels, heavy cast iron; 85%.

DRILLS—MULTI-SPINDLE.

4-spindle 20" Barnes, 85%.
4-spindle Barr sensitive, 85%.

DRILLS—RADIAL.

5' Bickford plain.
No. 1, 8' wall radial.
4' Prentice.
4' Cincinnati.

DRILLS—UPRIGHT.

20" Mechanics-Rockford, 60%.
24" Rockford, as above, 65%.
24" Kokomo hi-speed, slid. hd., 85%.
24" Aurora, slid. hd., gr. fd., 85%, (2).
24" Cincinnati, slid. hd., fric. bk. grs.
28" Cincinnati, sliding head, 80%.
32" Cincinnati, with tap. att., 75%.
24" No. 25 Foote-Burt, 90%.

FORGING MACHINES AND BULLDOZERS.

No. 3, Williams & White double end bulldozer, 80%.
1" Ajax, 75%, (3).
No. 4 Williams & White, bulldozer.
4" Acme, steel bed, 90%.
250-ton Mesta steam hydraulic, 85%.

GRINDERS.

No. 3 Brown & Sharpe univ., 70%.
10x36" Modern univ., and parts, 70%.
84" Diamond surface, 85%.
No. 4 Gardner, motor, disc, 85%.
Washburn drill grinder, 70%.
Yankee drill grinder.
Whitney wet tool grinder, 20"x2" wheel; 75%.
18x96" Norton plain, 75%.

HAMMERS.

No. 8 Beaudry, power, arranged for motor drive, 80%.
100-lb. Bradley, helve, 75%—90% (3).
800-lb. Billings & S., board drop, 75%.
800-lb. Waterbury-F., board dr., 75%.
850-lb. Bell, steam forging, 85%.
1500-lb. Waterbury-Farrell, board drop, 80%, (2).
2000-lb. Waterbury-Farrell, board drop, 80%, (2).
800-lb. to 4000 lb. Chambersburg and Massillon steam drop hammers.

LATHES.

16"x8' Hamilton, belt feed, 50%.
16"x9' Chard, with chucks, 90%.
18"x8' Lodge & Shipley, 70%, (4).
18"x8' American, 3-step cone, late model, compound rest, 85%.
19"x8' LeBlond, friction hd., 60%.
20"x10' Prentice, geared head, 85%.
24"x12' Reed, belt fd., l. ch. grs., 60%.
25"x14' LeBlond heavy duty, (3).
32"x18' Schumacher, cone head, 60%.
36"x18' Schumacher, tri bk. grd., 75%.
48"x26' Bridgeford, grd. hd., t.a., 85%.

MILLING MACHINES.

Style "B" Gooley & Edlund, 80%, (2).
20"x7"x18" Oesterlein plain, 50%.
No. 0 Steptoe plain, univ. heads, 90%.
No. 0 Rockford, new.
No. 1 Rockford pl. bk. geared, 90%.
No. 2 Brown & Sharpe vertical, 50%.
No. 2 Cincinnati plain, 80%.
No. 3 Brown & Sharpe, plain, 65%.
No. 3B Brown & S., pl., heavy, 60%.
No. 5 Becker, 50%, (4).
No. 13 B. & S., Lincoln type, 50%.
Becker miller, model "C," table 14"x54", motor drive, 85%.

PLANERS.

22"x24"x87" Fitchburg, 75%.
24"x8' Pond, single head, 50%.
30"x30"x8' Gray, single head, 80%.
30"x10' Lodge & Davis, sgl. hd., 50%.
60"x48"x16' Pond, 2 hds., old style, light pattern, 50%.

PIPE MACHINES.

2" Jarecki with countershaft.
4" Jarecki, with dies and countershaft, late model, 85%.
8" Jarecki, with dies and countershaft, late model, 85%.

Cyril J. Bath & Co.—Continued

PRESSES.

Waterbury-Farrel trimmers, 56" flywheel, 4" stroke, 60%, (3).
No. 57 Toledo trimmer, with side shear, 80%.
Waterbury-Farrel trimmers, 60" flywheel, 80%, (2).
Old No. 56 Toledo, 75%.
59½ Toledo, straight side, single crank, tie rod frame, 80%.
No. 56 Consolidated, 4" stroke, 80%.

PUNCHES AND SHEARS.

No. 2 Hilles & Jones horizontal punch, 70%.
54" gap American ship punch, capacity 1" thru 1", 70%.
No. 7 Cleveland alligator shear, all-steel frame, 6" square capacity.
Type 1-A Lennox rotary shear.

SAWS.

6" Racine hack saw, 75%. | 9" Racine hack saw, 75%.

SHAPERS.

20" American, crank, belt, 80%. | 32" Gould & E. invincible type.
24" Walcott, crank, back geared, 90%.

SLOTTERS.

10" Newton, with countershaft, 75%. | 12" Sellers, 75%.

TUMBLING BARRELS.

Several sets 18"x48" chill lined square, with roller bearings and exhaust.

TURRET LATHES AND SCREW MACHINES.

21" Gisholt, standard model, 70%. | No. 4 Bardons & Oliver, 50%.
7-A Potter & Johnston automatic.

WOODWORKING TOOLS.

24" Fay & Egan pattern lathe, 90%. | 15" Silver post drill, 90%.
Fay & Egan pony planer, 90%. | Fay & Egan ripsaw, 90%.

MISCELLANEOUS.

Blower, American, 9' fan, motor driven, 85%.
Blowers, Sturtevant, motor driven, 85%, (2).
Bolt cutter, 2" Acme, double head.
Boring machine, for cylinders, portable, 4" bar, 7" feed, arranged for motor or engine drive, 75%.
Gear cutter, 36" Gould & Eberhardt, 60%.
Gear hobbers, No. 12 Barber-Colman, 90%.
Magnetic chuck, 90%.
Riveter, Hanna I-beam frame, 12" gap, 90%.

FOR SALE BY

A. M. Stoehr Machinery Co.,

Blue printing and drying machine.
Bolt cutters, 3 & 6-spindle Acme.
Boring mills, 42" Baush; 54 & 60" Niles; all have 2 heads, and others.
Compressors, 12 different sizes.
Drill presses, 2 & 4 spindle Henry & Wright; 4-spindle Barnes, b. g., p. f., 14", and others.
Gear hobbers, cutters: 12" Cincinnati; 48" & 60" Gould & E.; 36" Fellows gear shaper, and others.
Grinders, Heald piston ring (4); No. 3 LaSalle plain and surface; 3x18" Norton, and others
Hammer, 500 lb. Beaudry, & others.
Header, No. 2 Manville.
Lathes, 22" to 44" McCabe; 18x8 Barnes, heavy duty; 16x8 Flather; 15 & 24 spinning, and others to 60".
Milling mchs., No. 25 Becker plain; No. 0 Bristol hand; No. 0 Rockford plain; No. 2 Van Norman duplex; No. 3 Thurston dieing, and others.

560 W. Adams St., Chicago, Ill.

Oil extractors, centrifugal, (8).
Pipe machines, 2" & 6" Jarecki.
Press, 500 lb. Elmes straightening press.
Punch presses, No. 16 Bliss horning; No. 10 Torris Wold, o. b. i.; Nos. 48 & 50 Crosby; No. 69 Stoll s. s.; No. 1 L. & A., ¾" cap., will punch 1½ thru 1", and others.
Punch & shears, No. 4 L. & A., d. e., ¾" thru ¾"; No. 14 W., d. e., 15" throat, and others.
Riveters, No. 5-A High Speed.
Saws, 9x9 Sterling high speed.
Screw machines, Nos. 2 & 3 Foster (12); Nos. 52 & 53 Acme, others plain and automatic.
Shears, Pittsburgh alligator, 1½".
Welders, both spot and butt.
Wire strai't'g mche., 3/16" Shuster; ¼" & ⅜" Wells, and others.
Also other machinery.

SECOND-HAND MACHINERY

FOR SALE BY

Bardons & Oliver, - - - Cleveland, Ohio

ENGINE LATHES.

18"x8' Flather, compound rest, p. f. & t. a.	$ 120.
14"x6' Flather, compound rest, p. f. & t. a., (2)	160.
22"x8' Flather, compound rest & power cross feed	180.
14"x6' Reed eng. lathe, with compound rest & p. c. f.	125.
14"x6' P. & W. eng. lathe, with compound rest & p. c. f.	135.
32"x16' Gleason, double back gears, compound rest, power cross feed and rack feed to tail stock	600.
19"x8' LeBlond heavy duty, with compound rest, quick change gears, p. c. f., arranged for t. a.	650.
18"x8', with compound rest and power cross feed	130.
22"x8' Flather, compound rest, with power cross feed	150.

MILLING MACHINES.

Pratt & Whitney plain milling (Grant pattern)	$ 150.
No. 12 Kempsmith milling machine (Lincoln pattern)	120.

BORING MILLS.

Warner & Swasey horizontal	$ 75.
No. 2 Rochester horizontal, with single pulley drive	500.

PLANERS.

24"x24" Cincinnati, one head, arranged for motor dr., without motor	$ 1200.
6"x6" Walter Bros., arranged for motor drive, without motor	200.

MISCELLANEOUS.

Gear generator, Gould & Eberhardt, with several high speed hobs, arranged for motor drive, without motor	$ 315.
Thread milling machine, Trundle, with several collets. This machine is new, and has never been run	1100.
Turret Lathes—We also have several of our older type No. 1—13/16 capacity Turret Lathes. These machines are new. Price, each	$ 400

FOR SALE BY

J. E. Haetten & Co., Inc., - 50 Church St., New York, N. Y.

Drills, 36" Snyder, s. h., with tapping att., 98%, (2), each	$ 600
Drill, 14-spindle Baush, 1½" spindle, 1" cap., 30" circle, 98%	500
Drill, duplex horizontal, No. 1 Garvin, 99%	400
Grinder, 16x50 Norton crankpin, late type	1,200
Grinder, 6x32 No. 11 B. & S. plain, belt drive, 80%	400
Grinder, 6x32 Norton plain, belt drive, 80%	400.
Grinder, 10x36 Norton plain, serial No. 4068, 80%	650
Grinder, 16x48 Landis crankpin, late type, 85%	1,600.
Grinder, 10x72 Norton plain, serial No. 6278, 90%	1,000.
Lathe, 78"x28' Putnam, triple geared, c. r., good	1,800.
Lathe, 48"x28' Pond, 3-speed, arr. for motor or belt, good	1,500.
Lathe, 14"x6' Hendey, taper, draw-in, tie bar head, A-1	700.
Lathe, 14"x6' Hendey, pan bed, q. c. g., open head	350.
Lathe, 20"x12' Johnson, geared head, taper, q. c. g., 90%	700.
Lathe, 18"—36"x8' Fay & Scott sliding bed gap, 90%	800.
Mill, 42" Bullard vertical, 2 heads, belt or motor	1,350.
Miller, 27" adj. rail, Ingersoll, 2 vertical heads, late type	1,800.
Millers, 14x48 table, slab type, 98%, (2), each	200.
Planer, 60"x42"x16' Powell, 3 heads, b. d.	2,500.
Planer, 120"x60"x22' Niles, 2 heads, b. d., A-1	5,000.
Press, D-201 Ferracute, 12" str., 32x32 bolster, 200 ton, A-1	1,400.
Press, 300 ton hydraulic, Bethlehem, 36" str., 95%	2,300.
Press, 3½ Bliss toggle, 8"—12" strokes, 26" wide, A-1	1,800.
Radials, 3' Carlton sensitive, b. d., tapping att., 95%, (2), each	450.
Radial drill, 4' American semi-universal, s. p. d., 90%	1,500.
Shaper, 21" Milwaukee, geared crank, excellent	600.
Threading lathes, 14"x10' automatic, 90%, (2), each	100.
Thread miller, No. 6 Lees-Bradner, 95%	800.
Turret lathe, 3"x36" Jones & Lamson	500.

FOR SALE BY

Marr-Galbreath Machinery Co., 58 Water St., Pittsburgh, Pa.

Angle & bar bender, No. 9 Buffalo.
Bender & straightener, No. 4 H. & J.
Blowers, No. 3 Stur., pressure.
Blowers, pos. pres., 2, 2½ & 5" outlet.
Bolt cutters, Acme 6", Landis 2½".
Bolt cutter, single 2½" head.
Bolt cutter, 2" Acme dbl., Landis hd.
Bolt cutter, 1½" Acme, triple head.
Boring mills, Rockford, 2" & 3" bar.
Boring mill, No. 21 Lucas hor., 2½" bar.
Boring mill, 36" Bullard, side head, vertical.
Boring mill, vertical, 72" Betts.
Boring mills, 51" Niles; 10'-16' Niles.
Boring mill, vertical 84", 2 heads, 220 v., d. c. motor, (near new).
Boring mill, 12' Pond, 2 heads.
Brake or press, 10' Robinson, toggle.
Bulldozers, Nos. 24, 6 & 30 W.-W.
Bulldozer, No. 1 W.-W. clutch pulley.
Compressor, 15x9x10 Bury, motor.
Comp'r, 2500 cu.ft. L. D. G., a. c. mtr.
Compressors, Curtis 2½x3" & 4½x4½".
Compressor, 7"x6", Ing. Rand.
Compressor, steam, 864 cu ft., Bury.
Compressor, 1300, 888, 599 cu.ft., m.d.
Drill, radial, 5' Prentice, g. b., st. d.
Drill, radial, 6' Baush. m. d.
Drills, 36" Hoefer; 24" Aurora, s. h.
Drill, 13" Washburn sensitive.
Drill, 28" Barnes, sliding hd., b. g.
Drills, 22" Aurora upright (2).
Drills, No. 2 Colburn, mfg. type, (4).
Drill, Allen, 20" sensitive, 4-spdl.
Exhausters, No. 8 Buffalo.
Filing mch., Hartford, bench, ⅞" st.
Forging machines, 1½, 2, 2½ & 3".
Gear cutter, No. 11 universal Dwight Slate.
Grinder, No. 60 Heald internal.
Grinder, Gardner, 16" disc & ring w.
Grinder, Diamond dbl. end, 14" wh.
Grinder No. 1 Besley 12" disc, swing and angle table.
Grinder, disc, No. 10 Besley, 18" wh.
Hack saw, No. 4 Marvel, cap. 6x6".
Hack saw, No. 7-KC Atkins, 8x8.
Hammers, 80, 100 & 125 lb. Bradley.
Hammer, st. drop., 1500 lb. Erie, new.
Hammers, sgl. fr., 350, 800, 1100, 1500.
Hot saw & burring machine, Acme.
Keyseater, No. 1 Davis, cap. 1" key.
Lathe, 42"x32' Am., grd. hd., m. d.
Lathe, 36"x18' American, g. h., t. a.
Lathe, 32"x14', Draper, 2½" h. s.
Lathe, 30"x14' L. & S., q. c. g., t. a.
Lathe, 24"x10' L. & S., q. c. g.
Lathe, 18"x10' Porter, s. b. g., c. r.
Lathe, 18"x8½' Hendey, pl. change.
Lathes, 18"x10' L. & S., & LeBlond.
Lathe, 18"x8' Am., q. c. g., tap. att.
Lathe, 16"x8' Bradford, pl. change.
Lathe, 14"x6' Monarch, q. c. g., t. a.
Lathe, speed, 11"x4' Prentiss, t-rest.

Miller, bench, No. 1 Burke, hand.
Miller, No. 3½ Fox, hand, 24"x6"x14½".
Miller, No. 0½ Cin. pl., 18"x6"x15".
Miller, No. 3 LeBlond, pl. ind. hd.
Miller, No. 3 Kempsmith universal.
Miller, vertical, No. C Becker.
Miller, vertical, No. 4, Becker.
Miller, vertical, No. 2½ Becker.
Miller, Hendey Lincoln No. 2½.
Miller, Knight duplex, tbl. 8½"x32".
Miller, No. 0 Kempsmith universal.
Miller, No. 3 Cinc'i, plain 32"x9x20.
Miller, vertical No. 0 & 1 Bickett.
Motor, ½ h. p., 230 volts, d. c.
Motors, 10 h. p., 110 v., d. c.
Nut tapper, 4½" Acme 6-sp. semi-auto.
Oil separator, No. 2 Roper, belt.
Pipe machines, 12", 6", 2" Jarecki.
Planer, 143"x96"x36', 5 heads, m. d.
Planer, 120"x120"x36', 4 heads, m. d.
Planer, 96"x84"x42', 5 heads, m. d.
Planer, o. s., 72"x72"x18', 3 hds., m. d.
Planer, 60x60"x12' Pond, 3 hds., m.d.
Planer, o. s., 48"x48"x16', 3 hds., m. d.
Planer, 42"x42"x12' Betts, 1 head.
Planer, 42"x36"x20' Cin'ti, 4 heads.
Planer, 26"x26"x8' Niles, 1 head.
Planer, 24"x24"x 5' New H., 1 hd.
Press, No. 27 Bliss, horning, b. g.
Press, No. 56 Toledo, pl. trim., 3" str.
Press, No. 11 Perkins, pl. trim., 4" str.
Press, No. 82 Consolidated horning.
Press, Bliss No. 20, o. b. i. plain.
Press, No. 16 horning, swing table.
Press, 152-B Bliss (Cleveland), 36" between housings.
Press, 93-A Toledo, double crank.
Punch, Cleveland 7" tht., cap. ⅞"x⅞".
Punch, 15" thts., dbl., ⅞"x⅞", arch. jaws
Punch & shear, H. & J., 72" tht., cap. 1½"x1½", motor drive.
Punch & s., No. 2 L. & A., 30" tht., a. j.
Pyrometer, 32 to 3000 deg. F.
Riveter, ½" Shuster, style A.
Riveter, Hanna 30 ton, 15" reach, 12" gap.
Rivet hammers, 3-A, 4-A, 5-A, hi. sp.
Rivet spinner, 3/16" Grant rotary.
Rolls, bending, 20'x⅛" H. & J., d. e.
Rolls, bending, 40'x1", m. d.
Saw, No. 11½ Higley, cap. 4" blade.
Shaper, 24" Gould & Eberhardt back geared crank.
Shaper, 15" Kelly, sgl. grd. crank.
Shaper, 24" Steptoe, bk. grd. crank.
Shears, Quickwork No. 6, m. d.
Shear, splitting, No. 26 Beloit, cap. ⅜", arr. for motor.
Shear, rotary, ⅜" Lennox, 8' gap.
Slotters, 16"x18" Bement-Miles.
Testing mchs., 100,000, 200,000 lbs.
Turret lathe, No. 1 Bardons & O.
Turret lathe, Libby 21", motor drive.
We Buy, Sell and Exchange.

FOR SALE BY

Syracuse Supply Company. 314 W. Fayette St., Syracuse, N. Y.

Guaranteed New Machines in original crates at prices below list:

Crucible, FD-104 Hoskins.
Drills, 21" Canedy-Otto (2).
Drills, 20" Buffalo (4).
Grinder, Churchill internal.
Lathe, 14"x6' Hamilton.
Lathe, 16"x8' Hamilton.
Lathe, 10"x5' Monarch.
Lathe, 14"x6' Monarch.
Lathe, 14"x8' Monarch.
Lathe, 16"x6' Monarch.
Miller, No. 4 LeBlond.
Miller, 42" type "B" Briggs.
Pipe machine, No. 70 Forbes.
Screw mchs., No. 4 W. & S., g.f.h., (3).
Slotter, No. 3 Rhodes.
Straightener, No. 2½ Corey.
Tilted turret, No. 4 Wood.

Exceptional values in Used Tools:

Drill press, 25" W. F. & John Barnes.
Drill press, 20" Barnes, sliding hd.
Drill press, 4-spindle Reed sensitive.
Drill press, 3-spindle Reed sensitive.
Drill press, 2-spindle Reed sensitive.
Grinder, No. 0 Wilmarth & Morman.
Lathes, 14"x 6' American (2).
Lathe, 14"x 6' Monarch.
Lathe, 16"x 6' Hendey, rebuilt.
Lathe, 16"x 8' American, geared head, rebuilt.
Lathe, 16"x 8' Monarch.
Lathe, 16"x10' American.
Lathe, 28"x12' Draper.
Miller, No. 5 Becker vertical.
Press, No. 69N Bliss.
Radial, 4' Cin'ti-Bickford, GB-BD.
Shaper, 16" Gould & Eberhardt.
Shaper, 24" Flather.
Thread miller, Lees-Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster (2).
Turret lathe, No. 2 Warner & S., hollow hex.
Turret lathe, 2½x26 Pratt & Whitney.
Turret lathe, No. 2½ s. g. Garvin.
Turret lathes, 3x36 Jones & L. (3).
Turret lathe, 2x24 Jones & Lamson.

FOR SALE BY

Hill, Clarke & Co., Inc., 156 Oliver St., Boston 9, Mass.

Machinery Bargains

BALL BEARING DRILLS

Leland-Gifford 2, 3 and 4 spdls., one 2-spindle with tapping attachment.
Allen 3-spindle, 8".

UPRIGHT DRILLS

Barnes 22½", stationary head.
Sibley 24", sliding head.

SURFACE GRINDERS

B. & S. No. 2, with magnetic chuck.
Diamond No. 1 automatic, 24"x12".

MISCELLANEOUS GRINDERS

Morse No. 1 plain, 4"x20".
Diamond No. 1 wet tool grinder.
Canedy-Otto No. 3, with exhaust.
Walls "Simplex" band surfacer.

GEAR HOBBER

Barber-Colman No. 2, 3"x7".

BENCH LATHES

Stark No. 3½.
American Watch Tool No. 3.
Waltham Machine Works 8"x36".
Rivett mfg'rs lathe, with turret, cut-off and forming slide, automatic chuck closer.

MILLING MACHINES

Brown & Sharpe No. 1½ plain.
Becker-Brainerd No. 2 universal, with univ. milling attach.
Hendey Lincoln type.
Whitney No. 6 hand miller.

PRESSES

Bliss No. 21½ grd. inc. power press.
Bliss No. 1½ screw press.
Standard No. 1 screw press.
Standard arch power press, roll feed.

AUTOMATIC SCREW MACHINES

Brown & Sharpe No. 00. (2).
Brown & Sharpe No. 0.
Brown & Sharpe No. 2.

HAND SCREW MACHINES

Brown & Sharpe No. 0.
Brown & Sharpe No. 2.

American No. 1 Oil Separator, Townsend and Hubbell Riveters, Fort Wayne and Holtzer-Cabot 220 v., 60 cy., 3 phase motors, Tumbling Barrel, Blowers, Cold Saws, Niagara 30" foot Shear, Hardening Furnaces, Arbor Presses, Bench Drills, Bench Filing Machines, Cincinnati Style 14 Time Clock, and other items and tools much in demand yet hard to find today.

Write or wire for full particulars.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

LATHES.

26"x10' Niles, q. c. g.
24"x12' Walcott, q. c. g.
24"x10' Lodge & Shipley, grd. hd.
20"x10' Boye-Emmes, qck. chg. gr., taper attachment.
20"x 8' Monarch, q. c. g., dbl. g.
18"x 8' Morris, q. c. g., dbl. g., (2).
18"x 8' Walcott, q. c. g., d. b. g.
18"x 8' Sidney, q. c. g., d. b. g., (2).
16"x 8' Pratt & Whitney, q. c. g., taper, relieving attachment.
16"x 6' Bradford, q. c. g.
16"x10' & 16"x6' Pratt & Whitney, taper, draw, collets, relieving attachment (3).
16"x 6' Walcott, q. c. g.
14"x 6' Hendey.
14"x 6' Sidney, q. c. g., taper att.
14"x 6' Sebastian, q. c. g., taper, geared head, motor attachment.
12"x11' Sebastian.
12"x 5' Pratt-W., taper, draw collets.
Cataract, Pratt & Whitney, and Rivett bench lathes, (10).

MILLERS.

24" Bullard.
No. 2 Kempsmith universal, (2).
No. 3 Kempsmith universal.
No. 1½-B Kearney & Trecker univ., vertical and ack cutting attach.
No. 1-B Kearney & Trecker univ.
No. 1 Kempsmith plain.
No. 1 Brown & Sharpe plain, (2).
National Transit Co. plain.
No 3 Becker vertical (3).
No. 3H Becker vertical (2).
Gooley & Edlund, production.
Pratt & Whitney thread miller.
2½" Twin spline miller, P. & W.
Bristol, Whitney, U. S. hand.
National Acme auto. screw slotter.

RADIALS AND DRILL PRESSES.

4' Fosdick, gear box feed.
36" Mueller Tool Co.
20" Dreses, Mueller.
24", 26" Aurora, Cincinnati, etc.
No. 3 Fox multiple, 16-spdl., ½" cap.
2, 3 spdl. 24" Aveys, 1" cap, (3).
4 spdl. Gooley & Edlund, ½" cap.
1, 2, 3, 8 sp. Leland-Gifford, ⅝" cap.
2, 4 spdl. Leland Gifford, ½" cap.
Large variety 14", 16", 20" drills.

GRINDERS.

Nos. 2 & 3 Brown & Sharpe univ.
Nos. 1 and 2 Cincinnati universal.
No. 2 Norton univ., magn. chuck.
No 2 Ohio universal.
No. 1½ Cincinnati universal.
10"x36" Norton cylindrical.
No. 1 Brown & Sharpe cylindrical.
O. C. Walker surface, magn. chuck.
4"x20" Norton cylindrical.
No. 11 Brown & Sharpe.
18", 28", 40" disc, Gardner, Besly.
No. 23 Brown & Sharpe cylinder
Nos. 60 & 65 Heald cylinder.

SHAPERS AND BOLT CUTTERS.

16" Smith & Mills, b. g. crank.
16" Lodge & Davis, crank.
1½" Acme, dbl. hd., lead screws.
2" National Acme.

SCREW MACHINES AND TURRET LATHES.

Jones & Lamson dbl., sgl. spindle.
Nos. 0, 1, 2 B. & S. semi-auto.
No. 6 Foster, power long. & cross fd.
Nos. 0, 1, 2, 3 Foster, Bardons & Oliver, Garvin, W. S., P. & W.
No. 6 Warner & Swasey.
1" & 1½" cap. Acme, b. g., frict. h.
¾", ⅞", 1⅛", 2", 2½" Cleveland auto.
Nos. 0 & 00 B. & S. automatics.
⅝" Gridley 4-sp. automatic.

PUNCH PRESSES AND SHEARS.

No. 6 Bliss, Stiles pattern.
No. 3 Long & Allstatter inclinable.
No. 3 Black & Johnson (3).
No. 65 Consolidated, 5½" stroke.
Nos. 0, 1 & 3 Consolidated.
No. 3C Consolidated inclinable.
No. 3 Niagara inclinable.
No. 3 Walsh inclinable.
No. 5 Zeh & Hahneman inclinable.
No. 5½ Milwaukee inclinable.

GEAR CUTTERS.

26" No. 3 Brown & Sharpe auto.
No. 13 B. & S., bevel & spur, (2).
Nos. 1 & 1½ Standard auto., (8).
Waltham automatic, (4).
No. 10 Bilton gear hobbers, (4).

MISCELLANEOUS.

Beaders, power.
Corrugating machine, steel, 7"x36", rollers 4"x10'.
Hammer, 60 lb. Bradley.
Rivet spinners, Grant.
Shears, circle and slitting.
Shears, 60" serpentine & split'g, (7).
Spot welders, Toledo and Thomson.
Tapping machines, all sizes.
Wire straighteners, 3/16"-⅜" Schuster.
Drill & lathe chucks, Stromberg periodograph, time clocks, time stamps, etc.
1000 different sizes emery wheels.

SECOND-HAND MACHINERY

FOR SALE BY

W. P. Little Co., • West 9th & Front Sts., Cleveland, Ohio

PUNCH PRESSES.

No. 1 Perkins bench, on stand.
No. 18 Bliss, o. b. i.
No. 3 Long & Allstatter, dbl. end.
No. 14½ Williams & White.

SHAPERS.

18" Wallcott b. g. crank.
20" Milwaukee b. g. crank.

RADIAL DRILLS.

3' Aurora plain.
4' Gang plain.

TAPPING MACHINES.

No. 1 Garvin automatic.
Rickert & Shafer radial tapper.

BAND SAWS.

30" Clement, wood.
36" White, wood.

GRINDERS.

No. 2 Oesterlein tool & cutter.
No. 75 Heald internal.
14" Pratt & Whitney surface.
No. 3 Modern universal.
No. 6 Bryant internal.
16" Heald rotary surface.

MISCELLANEOUS.

Bolt cutter, 2" Reliance.
Broach, 3-A LaPointe Hudson.
Hammer, 250 lb. Morgan steam.
Hammer, 50 lb. Bradley upright.
Miller, 18" Cincinnati.
Miller, No. 13 Garvin.
Screw mche., Brown & S. No. 1 auto.
Spline miller, 2" Pratt & Whitney.
Turret, No. 4 Warner & Swasey.
Turret, No. 6 Warner & Swasey.

Partial list. Send us your inquiries. 150 other machine tools in stock.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,
1211-1223 N. 12th St., St. Louis, Mo.

PLANERS.

24"x24"x 6' Lodge & Davis.
32"x30"x 7' Whitcomb.
36"x36"x10' Flather.

SHAPERS.

Smith & Mills, all sizes.
24" American.
15" Hendey, arranged for motor.

LATHES.

14"-24"x5½' Barnes gap.
14"x 6" Monarch, q. c.
14"x 6' Sidney, q. c.
18"x 8' Greaves & Klusman, q. c.
20"x 9' Cisco, q. c.
21"x 8' Sidney, q. c.
24"x12' Advance.
26"x13' Putnam, q.c., arr. for motor.
26"x14' Rahn & Larmon.
30"x15' American, q. c.
33"x20' Draper, triple geared.

DRILLING MACHINES.

3' arm Mueller, radial, s. b. drive.
3½' arm post drill.
Barnes drills, all sizes.
24" Aurora, sliding head.
34" sliding head.

MILLING MACHINES.

No. 2 Kempsmith.
No. 4 Cincinnati plain, single pulley.
No. 5-B Brown & Sharpe.
No. 33 Kempsmith.
No. 2 Brown & Sharpe plain.
No. 2 Knight vertical.
Nos. 0 and 3 Burke bench.
Whitney hand miller.

GRINDERS.

5"x18" Ott grinder.
16"x36" Thompson universal.
Greenfield universal.
No. 2 LaSalle surface grinder.
30"x84" Diamond face grinder.
12"x48" Landis plain.
Yankee twist drill.

MISCELLANEOUS.

Boring machine, horizontal, No. 2 Pawling & Harnischfeger.
Boring mill, No. 1 Binsse horiz.
Broacher, No. 1 LaPointe.
Bulldozer, 75-ton Lourie hydraulic.
Engines, Corliss, 75 to 200 h. p.
Magnetic pulley, 24"x26".
Pipe machine, 16" Bignall & Keeler.
Punch, No. 5 Long & Allst., 5" thrt.
Punch, No. 7 Long & Allstatter, 4" throat.
Riveter, 24" Shepard.
Screw machine, No. 6 Woods.
Shear, squaring, 10' Ohl, 3/16 gap.
Sheet metal cutter, No. 1 Gray.
Tilted turret lathes, Wood, (3).
Turret, 28" Gisholt, latest.
Wheel press, 84", 200 ton.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, - 111 Broadway, New York
Located at our various factories

NOTE—All Motor-Driven Machines are for 220 volts, direct current.

PLANERS.

24"x24"x 6' Powell, 1 head.
24"x24"x 6' Whitcomb, 1 head.
24"x24"x 8' Whitcomb, 1 head.
24"x24"x10' Whitcomb, 1 head.
26"x26"x 6' Gray, 1 head.
30"x30"x 6' Pond, 2 heads.
30"x30"x 8' Pond, 2 hds., rev. motor.
30"x30"x12' Pond, 2 hds., rev. motor.
32"x32"x10' Niles, 2 heads.
36"x36"x10' Niles, 4 heads.
36"x36"x12' Pond, 4 heads, rev. mtr.
36"x36"x16' Pond, 4 heads, rev. mtr.
38"x38"x10' Niles, 2 heads.
42"x42"x12' Niles, 4 heads.
42"x42"x14' Pond, 3 heads.
42"x42"x28' Pond, 4 heads, rev. mtr.
48"x48"x16' Pond, 4 heads, rev. mtr.
50"x36"x22' Pond, 4 heads, rev. mtr.
52"x36"x10' Pond, 4 heads, rev. mtr.
54"x54"x22' Pond, 4 heads, rev. mtr.
60"x60"x20' Niles, 3 heads.
60"x60"x24' Niles, 4 heads.
72"x72"x32' Ridgway, 4 heads.
120"x120"x36' Betts, 4 heads, motor drive thru belts.

DRILLING MACHINES.

3½' Morris radial.
5' Ridgway radial, motor driven.
6' Pond radial, motor driven.
6' Niles univ. radial, motor driven.
6' Niles semi-univ. radial, mtr. driv.
6' Pond radial, motor driven.

LATHES

18"x 6' Morris.
18"x 8' Morris.
17"x 8' LeBlond, motor drive.
18"x 8' Morris.
18"x10' Morris.
22"x10' Morris.
22"x12' Morris.
24"x14' Pond, quick change.
28"x10' Pond, motor drive.
26"x16' Pond, quick change.
26"x36' Pond, qk. ch., dbl. bk. grd.
30"x14' Pond, quick change.
30"x23' Pond, qk. ch., dbl. bk. grd.
32"x17' Pond, triple geared.
36"x12' Pond, triple grd., motor dr.
36"x17' Pond, triple grd., motor dr.
42" Pond forge lathe, motor driven.
60"x44' Pond, motor drive.
72"x21' Pond, motor drive.
2½"x26" Pratt & W. turret lathe.
3"x36" Pratt & W. turret lathe.
28" Pond rigid turret lathe.

SHAPERS AND SLOTTERS.

16" Stockbridge shaper.
26" Worcester crank shaper.
15" Bement slotter, motor driven.
18" Bement slotter, motor driven.
21" Bement slotter.

MILLING MACHINES.

No. 3 Brown & Sharpe plain, motor driven.
No. 5 Brown & Sharpe plain.
48"x48"x14' Bement slab miller, motor driven.
No. 3 Cincinnati vertical miller.
No. 5 Brown & Sharpe vertical.
No 10 Bement vertical.
6"x48" Pratt & W. thread miller.
6"x80" Pratt & W. thread miller.
6"x132" Pratt & W. thread miller.

GEAR CUTTERS.

No. 3 Brown & Sharpe spur.
No. 4 Brown & Sharpe spur.
No. 4 Newark spur.

VERTICAL BORING MACHINES.

36"-44" Niles side hd. mill. motor dr.
100" Niles boring & turn'g mill, m. d
10' Niles boring & turn'g mill, m. d.

HORIZONTAL BORING MACHINES.

40" Morris, horizontal boring and drilling machine, 2" bar.
60" Bement horizontal boring and drilling machine, 2¾" bar.
66" Bement horizontal boring and drilling machine, 4½" bar.
80" Bement horizontal boring and drilling machine, 5½" bar, motor driven.
60" Bement duplex control boring machine, 3½" bar, motor driven.
Pond floor drill, 3" bar.
Bement boring, drilling and milling machine, 3½" bar, motor driven.
Niles boring, drilling and milling machine, 3" bar, motor driven.

MISCELLANEOUS.

Pipe machine, 2" Cox, motor driven.
Punch, No. 3 L. & A. horiz., ⅞" in ½".
Punch, No. 2 L. & A., 48" thr., 1" in 1".
No. D L. & A. dble. 36" thr., 3" in 1⅛".

CRANES AND HOISTS

Electric Traveling Cranes. 220 Volts, Direct Current.

50-ton crane, 60' span.
3-ton crane, 20' 2½" span.

FOR SALE BY

Brown Machinery Co., - - 2323 N. 9th St., St. Louis, Mo.

Automatic, Cleveland 2", model A. Price..... 750.
Drill & tapper, Barnes 26", all geared, good condition. Price..... 300.
Drill, Baush No. 3 multiple, cap. 30 spdls., rectangular hd. 20x40". Price 1500.
Grinder, No. 14 Gardner, b. b., disk, dry, 20" disks, good cond. Price 400.
Grinder, No. 6 Besly two-spindle disk, 20" disks. Price..... 350.
Grinders, three No. 2 Gardner single spindle, double disk, with universal tables; good condition. Price, each..... 175.
Grinder, No. 2 American surface..... 375.
Grinder, Bath universal..... 750.
Grinder, LaSalle automatic surface, good condition. Price..... 275.
Grinder, No. 12 B. & S. 8x36" pl., for wet grinding; good condition. Price 450.
Grinder, No. 1 Brown & Sharpe universal, 10x24; good condition. Price 375.
Grinder, No. 14 Besly single spindle ring wheel. Price..... 400.
Lathe, 18"x 8' Lodge & S., q. c. g., d. b. g.; good condition. Price..... 475.
Lathe, 16"x 9' Lehmann, d. b. g., q. c. g., good condition. Price..... 475.
Miller, No. 2 Cincinnati b. g. plain, 28x10x18; good condition. Price... 500.
Miller, No. 1B Fox, hand & pwr. fd., 18x6x14; new, never used. Price.. 400.
Polishing & buffing machines, five New Britain drop head, good condition. Price, each..... 50.
Punch & stake riveter, No. 3 Hilles & Jones 60" throat, rapid action; cap. full depth throat ⅞" in 7/16"; 18,000 lbs; two stakes. Price..... 1500.
Screw machine, Wood No. 4 tilted turret. Price..... 500.
Shear, Niagara 8', 18 ga., foot power, square, splendid condition. Price 275.
Shear, Marshalltown No. 134 rotary splitting, cap. ¼" plate; 4' throat; arranged for motor drive. Like new. Price..... 750.

Many other bargains. Write for List No. 124.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1208 House Building, - - - Pittsburgh, Pa.

Air compressor, 10"x12", 164 cu. ft.
Air compressor, Ingersoll, 1180 cu.ft.
Bending roll, angle, 4"x4"x⅜".
Bending rolls, 8' x16 gauge.
Bolt cutters, 1½" to 4" Landis.
Borer, car wheel, 48" Pond.
Boring mill, 30" Bullard turret.
Boring mill, 36" Niles.
Boring mill, 42" King, m. d.
Boring mill, 60" Betts, 2 hds., m. d.
Boring mill, 84" Bullard.
Boring mill, 144" Pond, 2 heads.
Brake, 10' Dries & Krump, 14 gauge.
Drill press, 20" Barnes camel back.
Drill presses, 24" to 36".
Drill press, 1 D Colburn.
Drill, radial, 5' Prentice, s. p. d.
Drill, radial, 4' American, s. p. d
Engine, oil, 50 h. p. International.
Flanger, McCabe, ½" capacity.
Gear cutter, 38" Newark spur.
Gear cutter, No. 13 Brown & Sharpe spur and bevel.
Gear shaper, 36" Fellows.
Gear planer, 24" Gleason bevel.
Grinder, Landis crankshaft, 16"x48".
Grinder, Landis crankshaft, 16"x68".
Grinder, Landis plain, 12"x52".
Hammer, 200 lb. Bradley upright helve.
Hammers, 600 lb. to 6000 lb.
Hammer, 800 lb. Merrill board drop.
Lathe, 27"x10' Lodge & S., q. c. g.
Lathe, 50"x34' Pittsburgh.
Lathe, axle, No. 3 Niles.
Miller, No. 3-A Garvin plain.
Miller, No. 4 Brown & S. universal.
Pipe machines, 2" to 12".
Planers, 36" to 12'.
Planer, rotary, 48" Newton.
Press, No. 20 Bliss, o. b. i., 2" str.
Press, No. 37½ Bliss straight side, 6" stroke.
Press, wheel, 300-ton Putnam.
Punch, multiple, 84" Cleveland.
Punch & shear, Cinti, ⅜" thru ⅝".
Punch & shear, No. "A" L. & A., 2" thru 1½".
Punch & shr., H. & J., 1½" thru 1¾".
Punch & s., Pels, type RELUEF-16.
Riveter, 70-ton Hanna, 18" reach.
Sand blast, MacLeod, 36"x36".
Shaper, 24" Gould & E., bk. grd.
Shear, angle, 8"x8"x1½" L. & A.
Shear, angle, 6"x6"x1" L. & A.
Shear, guillotine, No. 3 Hilles & J.
Shear, rotary, Quickwork, 60" th'rt. 14 gauge.
Straightener, 30" Waterbury-F. ⅜".
Testing machine, 100,000 lb. Olsen.
Turret lathe, No. 2-A Warner & S.
Turret lathe, No. 4 Warner & S.
Turret lathe, 24"x6" Gisholt.
Welder, butt, Thompson, cap. 1½" rd.

FOR SALE BY

Hill, Clarke & Co., Inc., - 156 Oliver St., Boston 9, Mass.

GRINDER.

One Brown & Sharpe No. 10 motor driven Plain Grinder, 6"x20", with G. E. 5 h. p. motor, 220 v., 60 cy., 3 ph. Actual use less than fifty hours and purchased new in December, 1924.

FOR SALE BY

Herman L. Winterer, 943-53 N. Front St., Philadelphia, Pa.

LATHES.

42"x17' 4½" Bement-Miles.
37½"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q.c.g.
27"x12' Bullard.
26"x11' Wickes, q. c. g.
23"x10' Niles, q. c. g.,
25"x14' Hendey, q.c.g., taper attachment, oil pan, (2).
24"x14' Porter.
21½"x8' LeBlond.
20"x8'6" Walcott, d. b. g., c. g., (2).
20"x 8' Whitcomb Blaisdell, q. c. g.
19"x10' Draper, patent head.
18"x 8' Davis q. c., d. b. g.
18" x 7' Chard, d. b. g., semi q. c. g.
18"x6' to 8' lathes. (6).
16"x 8' Greaves & Klusman, b.g., t.a.
14"x 8' Filsmith, q c. g.
14—22"x6' Barnes extension gap.
10"x4' Summit, b. g., sliding head.
And many others.

TURRET LATHES.

3½x28" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20" Acme flat, 2½" h. s., motor drive.
20x7' 6" Pratt & Whitney, back grd.
20x7' Bridgeport, 2½" h. s.
19"x7' Fay & Scott, back grd.
No. 22½ Garvin Monitor.
No. 3 Kempsmith.
14"x 6' Warner & Swasey.
16"x6' Johnson, back grd.
No. 3 Bardons & Oliver back grd.
14½"x5' 3" Pratt & Whitney, (2).
No. 3 Foster Kimball.

DRILL PRESSES.

42" Gang radial, s. p. speed box.
40" Barnes horizontal radials, (2).
36" Bickford radial, circular base, motor driven.
34" Barnes, s. h., geared face, comp. table.
30" Davis & Egan radial.
28" Rockford, q. c. g. feed, (2).
24" Aurora.
20" Champion, stationary head.
20" Excelsior, stationary head, (2).
Henry & Wright sensitive.
Plain drills, all sizes.
Drill presses, assorted sizes.

MILLING MACHINES.

38"x6' Ingersoll horizontal slab.
No. 5 Cincinnati, table 9½x50½".
No. 15 Garvin, table 12x42".
No. 3 Becker Brainard, table 12x40".
No. 3 Hendey-Norton, q. c. g.
No. 5-C Becker vert., rotary table.
No. 5-B Becker vert., table 14x43.
No. 3 Becker vert., rotary table.
No. 7-H Lincoln type Becker miller.
No 1 Milwaukee plain.

PLANERS AND SHAPERS.

12'x10'x25' Sellers planer, 4 heads.
30"x30"x8' Hewes & Phillips planer.
30"x30"x8' Putnam planer.
26½"x26"x 6' Hendey planer.
24"x24"x6' Sellers planer.
48" Morton draw-cut shaper.
39" Pedrick & Ayer, open side.
14" Warren shaper.

MISCELLANEOUS.

Boring mill, car wheel, 60" Newton.
Boring, drilling and milling machine, 17½" Bement Niles horizontal.
Grinder, 13½"x5' Landis universal.
Grinder, No. 1 Brown & Sharpe univ.
Grinder, disc, No. 17 Besly.
Hammer, 15 lb. Bradley helve.
Hammer, 25 lb. Little Giant, m. d.
Hammer, 40 lb. Bradley, helve.
Hammer, 60 lb. Hotchkiss.
Hammers, 60 lb. Bellefonte upright, 2
Hammer, 500 lb. Merrill board drop.
Hammer, 750 lb. Merrill board drop.
Hammer, 1250 lb. Bell steam.
Keyseater, 18" stroke Morton.
Molding machine, 24" Taber, with roll over.
Punch presses, all sizes, (55).
Punch & shear, Industrial Wks, d.e., capacity ¾" in ¾"; squaring ¾"x8".
Riveter, air, 6' gap Allen, cap 1".
Riveter, air, 25" gap Allen, cap. 1".
Slotter, 14" Niles.
Tooth rounding mche., Schuchardt & Schutte.

Large assortment of General Machinery. Send for Complete Price List.

SECOND-HAND MACHINERY

FOR SALE BY

M. A. Wertman, - - 505 Superior Bldg., Cleveland, Ohio

Amplifying gauge, American universal, 98% new.
Bench centers, B. & S. 8"x36" improved type, 95%.
Grinder, No. 1 Wilmarth & Morman surface, 95%.
Hammer, High Speed riveting No. 4A, 85%.
Lathe, 14"x6' Hendey, taper and draw-in attachments.
Press, No. 2 Bliss-Styles flywheel.
Press, No. 206-C Toledo geared.
Press, No. 68 Stoll s. s., geared, all-steel frame.

FOR SALE BY

The Reeve-Fritts Company, 558 Washington Blvd., Chicago, Ill.

Die filer, No. 3 Barry, floor type.
Drill press, Hoefer, 9/16" capacity.
Drill press, C. & O. radial, 2½' arm.
Grinder, 12" Besly, disc.
Lathe, No. 4 Cataract, bench.
Lathe, 14"x6' Rockford, q. c. feeds.
Lathe, 16"x6' Monarch, q. c. g.
Lathe, 22/36"x8' gap, solid bed.
Lathe, 16" Dreses univ. Fox.
Pipe machine, 2" Jarecki.
Pipe machine, 4" Williams.
Planer, 22"x22"x5' Powell.
Press, No. 1 Walsh, 1½" stroke.
Press, No. 3 Cons., 1" stroke.
Press, No. 3 Rockford, 3" stroke.
Shop saw, No. 5 Marvel automatic.

FOR SALE BY

Peninsular Machinery Co., 429-31 E. Jefferson Ave., Detroit, Mich.

LATHES.

13"x 5' South Bend, (3).
13"x 5' Champion, l. c. g.
13"x 5' Blount speed lathe.
14"x 6' Carroll-Jamieson, (2).
14"x 6' Flather, l. c. g.
14"x 6' Reed, l. c. g., (2).
14"x 6' Rockford, l. c. g.
14"x 8' Monarch, l. c. g., taper.
16"x 8' Bradford, l. c. g.
16"x 8' LeBlond, quick change.
17"x8' LeBlond rapid product'n, m.d.
18"x8' Monarch, q. c.
21"x11' LeBlond, all geared, (2).
21"x12' LeBlond line bearing, (3).
26"x16' LeBlond crankshaft, (2).
3½x36 Lo-Swing.

DRILLING MACHINES.

3-spdl. Henry & Wright, h. s., b. b.
22½" Sibley all-geared, p. f., with tap.
22½" Sibley all-geared, p. f.
23" Rockford, s. h., with tapper.
24" Cincinnati, s. h.
28" Barnes, s. h., tapper.
No. 3 Baush multiple.
25" Fosdick s. h. all-geared tapper.

MILLING MACHINES.

No. 0 Farwell q. c.
Briggs type A, (2).
No. 12 Brown & Sharpe.
No. 32 Kempsmith.
No. 33 Kempsmith plain.
No. 1½ Cincinnati plain.
12" Cincinnati plain manufacturing.
No. 3H LeBlond plain, cone type.
No. 2 LeBlond all geared plain.
No. 2 Kempsmith all geared vert.

TURRET SCREW MACHINES.

1½" Defiance, f. h.
2" Milholland, f. h.
2½x26 Pratt & Whitney, a. c.
No. 4 Warner & S. f. h. turret lathe.
No. 3 Foster f. h. turret lathes, (2).

GRINDERS AND POLISHERS.

10x24 Landis plain.
No. 24 Gardner vertical.
No. 70 Heald internal.
No. 50 Heald cylinder.
No. 210 Heald magnetic.
20" Blount wet grinders, (2).
No. 15 Bryant, motor drive.
No. 26 Besly, double spindle, m. d.
No. 4 Webster & Perks polishing.
Bennett & O'Connell dbl. sp. pol.
No. 23-B Valley City disc.

MISCELLANEOUS.

Band saw, 6" Napier.
Centers, bench, Brown & Sharpe (3).
Cutting-off mchs., 4" Hurlbut-R., (2).
Filer, No. 2 Cochrane & Bly.
Gear tester, bevel, Gleason.
Hammer, drop, No. 5 Williams-W.
Lapping mchs., Bethel-Player, (2).
Metal cutter, No. 1 Gray.
Screw slotter, No. 1 National Acme.
Tooth round's, 12" Rochester aut. (2).
Tumbling barrels, No. 3-S Globe, (2).

SECOND-HAND MACHINERY

FOR SALE BY

Clark Machinery Co., 1235-45 St. Clair Ave., Cleveland, O.

Bolt cutters, 4-sp. Webster & Perks.
Bolt threaders. National Acme.
Boring mill, No. 2 Rockford.
Boring mill, Fosdick horizontal.
Chucking grinders, No. 6 Bryant.
Drills, upright, 16" to 28".
Gear cutter, Sloan & Chase.
Gear cutter, Meiselbach.
Grinders, Pratt & Whitney plain.
Grinder, Modern plain.
Grinder, Morse plain.
Lathes, 12" to 24".
Milling machines, plain, Nos. 0 to 4.
Milling mches., univ., Nos. 1½ & 2.
Milling machines, Nos. 2, 3, & 5 vert.
Planer, 24"x24"x8' Whitcomb.
Planer, 42"x42"x10' Gray.
Radial drills, 2½' and 3'.
Radial drill, Henry & Wright h. s.
Radial grinder, Rivett.
Screw machines, Nos. 4 & 6 W. & S.
Screw machines, Nos. 5 & 6 Foster.
Square shears, 6', 18 gauge.
Thread miller, Milled Screw Co.
Turrets, Potter & Johnston No. 5A & No. 6A.

Machine tools for every purpose. Send us your inquiries.

FOR SALE BY

Reliance Machinery Sales Company

Brighton Road at Pennsylvania Ave., - - Pittsburgh, Pa.

Bolt cutter, Acme 2" class "A", ¼" to 2".
Boring mill, 24" Bullard, rapid prod.
Boring mill, 30" Bullard, 1 head.
Boring mill, 34" Colburn, 1 head.
Boring mill, 42" Bullard, 2 heads.
Boring mill, 72" Niles vert., 2 hds.
Brake, 60" Dreis & Krump, cap. 14 ga., m. d.
Bulldozer, No. 1 Williams & White.
Bulldozer, No. 5 Williams & White.
Bulldozer, No. 6 Williams & White.
Die slotter, 3½" stroke, Garvin.
Drill, 20" Barnes, Camel Back.
Drill, 24" Hoefer, sliding head.
Drill, 36" Snyder, sliding head.
Drill, 2' 6" Carlton high speed radial.
Drill, 3' Mueller radial, g. b., s. p. d.
Drills, Amer. 4 & 5' radial, g.b., s.p.d.
Drill, No. 1 Avey ball bearing, 3-sp.
Gear cutter, 36"x10" G. & E., s. p. d.
Gear cutter, 60"x12" G. & E., s. p. d.
Grinder, 6"x32" Norton plain cyl.
Lathe, 12"x 6' Seneca Falls.
Lathe, 14"x 6' Seneca Falls, q. c. g.
Lathe, 14"x 6' Hendey, tie bar.
Lathe, 14"x8' Whitcomb-Blaisdell.
Lathe, 16"x8' Hendey, tie bar.
Lathe, 17"x8' Sidney, hvy. duty, q.c g.
Lathe, 18"x10' Lodge & Shipley, q.c. g., m. d.
Lathe, 18x10' Reed, q. c. g., d. b. g.
Lathe, 24"x12' Lodge & S., q. c. g.
Lathe, 30"x12' Johnson, triple grd.
Lathe, 34"x12' LeBlond, trip. grd.
Miller, No. 1 Steptoe, with div. hd.
Miller, No. 1 U. S., complete.
Miller, No. 2-A B. & S. univ., s. p. d.
Miller, No. 2 Cincinnati h. p. vert.
Miller, No. 2 Cincinnati plain, v. a.
Miller, No. 3 Hendey plain.
Miller, No. 29 Oesterlein universal.
Millers, Sellers, Lincoln type, (2).
Miller, model "B" Becker, vert., s.p.d.
Miller, model "C" Becker vertical.
Nut tapper, 2" National, 6-spindle.
Pipe machine, ½" to 2" Armstrong.
Pipe machine, Jarecki, cap. 1" to 4".
Pipe machine, Bignall & Keeler, ½" to 2", m. d.
Pipe machine, Merrill, 1½" to 6".
Pipe machine, Merrill, 2½" to 12".
Planer, 24"x24"x 6' Gray, 1 hd.
Planer, 30"x30"x10' Woodward & P.
Planer, 36"x36"x8' Cincinnati, 1 hd.
Planer, 72"x72"x18' Detrick & Harvey open side, m. d.
Press, No. 4 Toledo, o. b. i., 2½" str.
Press, No. 5 Toledo, o. b. i., 3" str.
Press, No. 10 Bliss, reducing, 4" str.
Press, No. 23 Stoll, horning.
Press, No. 52 Bliss, s. s., 2" stroke.
Presses, Nos. 61 & 62 Bliss, o.b., I.w.
Press, No. 87 Niagara, screw.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 65 Consolidated, 5" str.
Press, No. 168 Toledo toggle.
Press, No. 395 Bliss straight sided.
Punch, Reade s. c., ¼"x1¼", arch. jaw.
Reduction gear, Foote, 50 to 1.
Saw, No. 8 Marvel metal band.
Saws, American metal sw., m. d., (2).
Screw mche., No. 2 W. & S., pl. head.
Shaper, 20" Cincinnati b. g. crank.
Shaper, 24" Springfield, b. g. crank.
Shaper, 24" G. & E. b. g. crank.
Shear, No. 2 Quickwork rotary.
Shear, 72" Niagara sq., cap. 14 ga.
Shear, 96" Stoll, 16 gauge.
Shear, squaring, power, 20 ga.
Tooth rounder, 12" Rochester.
Wire straightener, No. 1 Shuster, ¼"x8' 6".

Our warehouse is full of bargains. What have you for sale?

FOR SALE BY

McMullen Machinery Company, - - Grand Rapids, Mich.

Automatic, ⅜" Cleveland.
Automatics, No. 00 B. & S.
Band saw, 10" Napier, metal.
Cut-off saw, No. 4 N. & B.
Drill, 31" Barnes, sliding head.
Grinder, Cleveland, profile.
Grinder, No. 6-A Bryant.
Lathe, 9"x21½" Sundstrand, mfg.
Lathe, 2¼x26 Greenlee, flat turret.
Miller, No. 2-H Becker vertical.
Pipe mch., 6" Merrill No. 6¾.
Press, Chicago scrap baler.
Press, No. 3 Manville, d. a.
Presses, No. 6 Manville, pillar, (3).
Presses, No. 6B Manville, pillar,(2).
Shear, No. 14 Pettingell, rotary.
Shear, No. 2 W. F. Co. 36" gang.
Welders, No. 10-A Thomson vert.(7)

Ask for Complete List.

FOR SALE BY

Brownell Machinery Co., - 150 Pine St., Providence, R. I.

BORING MILLS.

24" Bullard New Era.
24" Bullard rapid production.
30" Baush vertical.
No. 1 Cleveland horizontal.

DRILLING MACHINES.

Henry & Wright sensitive radial.
25" Weigel, sliding head.
23" Snyder.
14" 1-spindle Allen, h. s., b. b.
3-spindle Reed-Prentice, h. s., b. b.
3-spindle Cincinnati.
5-spdl. Henry & Wright, class "K".
No. 34-A Demco 3-spindle bench.
No. 34-A Demco 4-spindle bench.
No. 1 Langelier, h. s., b. b.
No. 2 Langelier, h. s., b. b.

GRINDERS.

No. 2 Brown & Sharpe cutter.
No. 1 Norton tool & cutter.
No. 2 Norton tool & cutter.
20" Taylor & Fenn wet tool.
No. 12 B. & S. plain cylindrical 8x38.
No. 1 B. & S. universal 10x24.

PLANERS AND SHAPERS.

17"x17"x 4' Whitcomb.
17"x20"x 5' Whitcomb-Blaisdell.
22"x22"x 5' Whitcomb.
24"x24"x 6' Powell.
28"x30"x14' Whitcomb-Blaisdell.
30"x30"x12' Bement-Miles.
54"x42"x14' Gray, 3 heads.
15" Potter & Johnston shaper.
16" Ohio plain shaper.
24" Potter & Johnston shaper.

METAL CUTTING MACHINES.

7K Atkins Kwik Kut hack saws, 8x8.
Peerless h. p. hack saws, 6"x6".
No. 1 Burr cold saw.
No. 2 Burr cold saw.

TURRET MACHINERY.

No. 2 Southworth hand screw mche.
1¼x18 Pratt & Whitney b. g. hand screw machines.
No. 2½ Garvin geared fric. hd. hand screw machine.
2"x24" Jones & Lamson flat turret.
3"x36" Jones & Lamson flat turret.
No. 2P Potter & Johnston combination piston and piston ring machines.
Model B Cleveland full automatics, ⅝"-⅜".

PRESSES.

100 lbs. Standard automatic drop.
100 lbs. Standard plain drop.
50 lbs. Standard plain drop.
No. 54 Niagara s. a. power, 4" grd.
No. 60½ Bliss rack & pinion.
No. 39 Bliss horning press.
No. 1 Standard broaching & drawing.
No. 24 Atlas arbor press.

MISCELLANEOUS.

Broaching machine, No. 0 LaPointe.
Gear cutter, No. 3 B. & S. auto., 26".
Gear cutter, No. 13 B. & S. auto., 18x4.
Miller, No. 15 Garvin plain.
Miller, No. 4 Cincinnati pl., gear dr.
Miller, No. 1 Kempsmith plain.
Miller, No. 1 Kempsmith universal.
Millers, Whitney hand.
Rolling mill, McWilliams, plain bearing, 5x8.
Rolling mill, No. 8 Standard, roller bearing, 12x18.
Shear, McWilliams power rotary.
Slotter, 12" Bement-Miles.

WOOD-WORKING MACHINERY.

Band saw, 28" Crescent.
Lathe, 20"x8' Fay & Scott pattern makers.
Jig saw, No. 1 Beach.
Saw table, No. 650 Dover.
Saw table, Rollston, double arbor.

Garvin No. 14 swivel base Milling Machine Vises, brand new, half price.

SECOND-HAND MACHINERY

FOR SALE BY

Olcott's Grinding Machine Works. - Paducah, Kentucky

Grinder, 8x30 Modern, 99% new.....$ 750.
Planer, 24"x20"x5' New Haven..... 175.

FOR SALE BY

A. F. Strafer. - - - 30 Church St., New York City

BORING MILLS, VERTICAL AND HORIZONTAL.

10'—16' Betts extension.
72" Bement Miles, belt drive.
60" N.-B.-P. vert., d. c., m. d.
53" Niles-B.-P. rapid trav., d. c., m. d.
42" Bullard turret head.
36" Bullard v. t. l.
Landis No. 35, floor type horizontal.
No. 3 Universal horiz., s. p. d.
No. 2 Barrett, 5" bar, cylinder borer.
No. 2 Rochester horiz., 3" bar, s.p.d.

DRILLS, UPRIGHT AND RADIAL.

6' Mueller plain, m. d.
6' Baush, belt drive, new.
5' Baush, belt drive.
4' Fosdick, gear box.
No. 310 Baker, heavy duty.
26" Sibley, sliding head.

GRINDERS

No. 16 Blanchard, motor drive.
Springfield Brandes, 12x48" surface.
Norton 10"x72" plain.
10"—36" Norton, nearly new.
10"x24" Landis, self contained.
10"x30" Webster & Perks univ.

LATHES

44"x21' Niles-Bement-Pond, t. g., belt drive.
36"x32' Niles-Bement, belt drive.
26"x26' American.
24"x12' American.
24"x10' LeBlond, q. c., & t. a.
24"x10' American, new.
20"x15' Sidney, q. c., d. b. g.
20"-38"x16' Rahn Larmon, slide gap.

TURRET LATHES.

3¼"x36" Jones & Lamson, bar equip.
2½"x24" Jones & Lamson, bar and chuck equipment.
3¼"x36" Cin'ti Acme flat, modern, geared head, chuck equipment.
28" Gisholt belt drive.
24" Gisholt, 6⅝" hole thru spindle.
24" Steinle, new, half price.
2½x26" Greenlee, chuck equipment.

MILLING MACHINES.

No. 3 Brown & Sharpe, pl. cone type.
No. 3 Cincinnati vert., high power.
Kempsmith No. 3 univ., cone type.
No. 2 Cincinnati h. p. univ.
30"x14' Ingersoll, 4 heads.
36"x12' Ingersoll, 2 heads.

PLANERS.

150"x25', 4 heads, stand, belt drive.
120"x25' Sellers, motor drive.
72"x72"x18' B. B. P., electric drive.
60"x60"x16' Gray, 4 heads.
54"x54"x16' Sellers, 4 heads.
42"x42"x10' Clevel'd open s., 3 hds.
36"x36"x8' Sellers, 4 heads, belt dr.
28"x28"x10' American, 1 head, b. d.

PIPE MACHINES AND BOLT THREADERS.

4" Saunders, belt drive.
1½" Little Giant, auto. head.
1½" National bolt cutter.
2½" to 10" Curtis & Curtis.
Jarecki 2½", a. c. motor drive.
2" Acme bolt, gear box.
1½" bolt, Wiley & Russel.
2½" Landis bolt threader.

PUNCHES AND SHEARS.

No. 6 Quickwork rotary.
No. 10 Quickwork, 60" throat.
No. 4 H. & J. double, 48", t. a., c. m.
No. 2 H. & J. double angle.
No. 6 H. & J. 60" thrt., a. c. motor.
No. 5 H. & J., 48" t., a. c. motor.
No. 4-A Quickwork, motor drive.
Morgan & W. gate shear, 9', ⅜" cap.
Pels type beam shear, 6" to 24" cap.
Badger State 9C., 24" t., ⅜" d. e.

ROLLS.

No. 6 Hillis-Jones 25', 1" capacity.
20' N.-B.-P., 18" top roll, latest.
7' Sellers, ⅜" cap., drop end.
12' drop end, 7/16" capacity.

MISCELLANEOUS.

Beading & slitt'g mch., Quickwork.
Brake, tinsmith's, 98".
Drill chucks, 1".
Gas engine, 15 h. p. Novo 2 c., new.
Hammer 3000 lb. Bell, double frame.
Hammer, 600 lb. Erie, forging.
Header, Ajax 1½", all steel.
Jointer, 12" American.
Saw, No. 6 Nutter & B., a. c. motor.
Saw table, universal, American.
Screw machines, automatic, all sizes.
Surfacer, single, 30" American.
Tapping attach., 1" Errington.

FOR SALE BY

Mid-West Machine Tool & Supply Co., • Davenport, Iowa

With a good-as-new, money-back guarantee—Partial list.

Automatic, 1½" Cleveland, model A.
Automatic, 2½"-3½" Cleve., model A.
Boring mill, 24" Bullard.
Boring mill, 36" Gisholt.
Bulldozer, new No. 4 Badger.
Drill, 36" Colburn heavy duty.
Drill, No. 22 Natco.
Engraving machine, Gorton.
Grinders, No. 10 B. & S. pl., s. p. d.
Grinder, 10"x36" Norton plain.
Hobbers, Barber-Colman No. 3.
Millers, No. 2 Hendey plain.
Miller, No. 3 Cincinnati plain.
Punch, s.e., F24 Badger, 1½" thru 1".
Radial, 4' American sensitive.
Thread miller, new Taft Pierce.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Bow rounder, No 2 B. & S. auto.
Clock, electric time system.
Demagnetizer, Walker.
Drills, Lel. Gif. 1-2-3 sp., h. s., b. b.
Drill, Detroit 5-sp. horiz.
Drill, Rockford horiz. boring & drill.
Drill, Mueller 3½' s. p. radial.
Furnace, Holcroft 92 k. w. annealing.
Lathes, Davis 22"x10', Bridgeford 27x9, Walcott 18x8, q. c.
Lathe, Star 14x6, mtr. drive, collets.
Milling machines, Hendey No. 2G univ.; LeBlond No. 4 heavy plain; Ohio No. 20 pl.; 2 Knight vert mill & drill; Becker "SD" vert, rotary table. 17200 lbs.; Ohio No. 42 plain.
Pipe machine, Oster 4", and dies.
Planers, Sellers 36"x36"x23', 2 heads; Pond 42"x42"x16', 2 heads.
Punch presses, Consolidated No. 67 geared, wt. 30,000; Ferracute No. 2, straight back; Swaine No. 40 arch; Neevel bench; Consol. No. 3.
Punches, Felber 1" in 1", and Slitt shear; Scully, 20" throat, 1" in 1".
Saw, Nutter Barnes 6" cold.
Shaper, 26" open side planing; 15" & 18" Smith & Mills; 15" Kelly; 16" Milwaukee, b. g.; 7" Rhodes.
Shears, 60" thrt. rotary slitting, (2).
Thread miller, Lees-Bradner No. 4.
Torches, 50 vapor blast heat, new.
Welders, 20 k. w. spot. Toledo, (2).
Welders, butt, Federal, ¼" rds.

FOR SALE BY

McCoy-Brandt Machinery Co., 210-14 Penn Ave., Pittsburgh, Pa.

Air compressor, 10"x10", with motor, 3-60-220 volts.
Air compressor, 212 cu. ft., Chicago portable, oil driven.
Boring mill, 48" Colburn, 2 heads.
Boring mill, 10' Niles, 2 heads.
Bulldozers, Nos. 1, 5, 6 & 30 W.-W.
Drills, radial, 5' Prentice, s. p. d.
Drill, radial, 6' Prentice, belt drive.
Forging machines, 2" and 3".
Grinder, No. 2½ Woods univ. tool & cutter.
Grinders, 12"x48" Cincinnati plain.
Grinder, Gisholt universal tool.
Grinder, 36" Diamond wet tool.
Grinder, 10x32" Ott universal.
Grinder, No. 4 Gardner double disc.
Lathe, 14"x6' Hendey, grd. hd., m.d.
Lathe, 16"x10' L. & S., cone, taper.
Lathe, 19"x14' LeBlond, grd. hd.
Lathe, 24"x28' American, q.c.g., m.d.
Lathe, 27"x18' L. & S., m. d., t. a.
Lathe, 30"x18' L. & S., m. d., t. a.
Lathe, 36"x20' Sidney, q. c. g., cone.
Lathe, 42"x32' Amer., grd. hd., m.d.
Millers, horiz., Nos. 2 & 5 Cincinnati.
Miller, vertical, No. 0 Bickett.
Millers, Nos. 2, 5C & 6 Becker vert.
Millers, vertical, No. 3 Brown & Sharpe, motor drive.
Miller, No. 4 Rockford univ., s.p d.
Miller and driller, No. 1 Knight.
Pipe machines, 12", 10", 8", 4" & 2".
Planer, 30"x30"x8' N. B. P., 1 head.
Planer, 36x36x12' Powell, 3 heads, like new.
Planer, 30"x30"x8' Flather, 1 head.
Planer, 72"x72"x16' Betts, 4 heads.
Press, No. 4 Loshbough, 3" stroke, 3500 lbs.
Punch, 36" Cleveland 1½"x1", m. d., arch. jaw.
Punch, 24" Cleveland ⅞"x⅞", m. d., arch. jaw.
Punch, dbl. end, 20" throats, 1½"x1".
Punch, 24" throat Hilles & Jones, ⅞"x⅞".
Rolls, bending, 16'x⅜" Wickes, m. d.
Shaper, 26" Springfield, crank, b. g., with down feed and concave att.
Shears, guil., cap. 2½" and 2" and 1".
Shear, rotary bevel, cap. ⅞", m. d.
Slotter, 12" Newton, crank, cheap.
Turret lathe, 18" Libby, like new.

FOR SALE BY

Rosenfeld Machinery Co., - 942 W. Lake St., Chicago, Ill.

Bench drills, b. b., Leland-Gifford.
Bench lathes, Pratt & Whitney screw cutting; Hardinge Bros.
Chain hoists, ½ to 12 tons, Yale & Towne and Ford triplex.
Cutters and hobs.
Drills, high speed.
Drill presses, all sizes.
Gear hobber, Barber-Colman No. 12.
Hand millers, Van Norman No. 1.
Lathe, 16"x8' Monarch, q. c., d. b. g.
Milling mch., vert., Becker mod. C.S.
Motors, a. c., all sizes, 3 ph., 60 cy.
Motors, a.c., 3 ph., 25 cy., 7½ to 50 h.p.
Punch presses, Niagara.
Radial drill, 2' American.
Tumbling barrels, 2 compartments, 6"x15" each, for small work.
Turret lathe, 3¾"x36" Acme.

Complete estimates furnished on transmission appliances.
We solicit your inquiries.

FOR SALE BY

Tubor, Velick & Co., Inc., - - 628-630 W. Lake St., Chicago, Ill.
Telephones: Monroe 4199-6813. No Branches

PUNCH PRESSES.

No. 3 Walsh.
No. 4 American Can.
No. 7 Beatty, cap. 1¼" in 1".
No. 15 Torris Wold.
Perkins punch presses, ½" str. (20).
Nos. 13 & 15 single end punches.
Long & Allstatter horn punch, capacity 1¼x1.

DRILL PRESSES.

14" Excelsior.
20" b. g., p. f., new, $130.
20" drill presses (40), each $40.
26" Weigel.
30" Reed-Prentice.
Demco high-speed drills.
Bench type drills.

MILLING MACHINES.

No. 2 LeBlond.
No. 2 Cincinnati vertical.
No. 2 Cincinnati universal.
No. 3 Kempsmith.
A number of hand millers.

LATHES.

11"x 5' Sterling.
15"x 8' Sidney, q. c.
16"x 6' Sidney, q. c., (2).
16"x 6' Monarch q. c.
16"x 68' Canedy-Otto.
16"x 8' Hendey, q. c., taper att.
17"x 8' Sidney, q. c.
20"x 8' Lodge & Shipley, geared head, s. p. drive.
24"x10' Canadian, q. c., d. b. g., (3).
25"x10' Sidney.
Dalton Six.

PLANERS.

24"x24"x6' Pond.
24"x24"x 8' Putnam.
30"x30"x 8' Fitchburg.
36"x36"x 7' Flather, 2 heads.

SHAPERS.

16" Milwaukee.
16" Whipp, b. g.
24" Rockford.
24" Kelly.

SCREW MACHINES.

No. 2 Smith, hand.
No. 2 & No. 3 Foster.

GRINDERS.

No. 2 Manhattan surface.
Gardner No. 2 & No. 6 disc grinders.
No. 14 Besly, disc.
Emery grinders, $2 and up.

WOOD-WORKING MACHINERY.

Band saws, 36" Famous, new, (10).
Boring mills, Andrew, (3).
Glue jointer, Falls.
Jointers, 4" D. C. Wallace.
Planer, 30" Berlin.
Saw table and jointer combined, portable.
Shapers, double spindle, Whitney and Fay.
Swing saws, Porter, (4).

MISCELLANEOUS.

Buffers, U. S. and Westinghouse, 5 h. p., b. b.
Cold saw, No. 20 Lea-Simplex.
Hack saws.
Keyseaters, Davis.
Lift trucks, Barrett, 1 ton cap.
Motors, a. c. and d. c.
Punch & shear, No. C Cleveland.
Radial drill, 2½' Canedy-Otto.
Radial drill, 2½' Cin'ti Bickford.
Time clocks, International.
Trucks—1,000 factory trucks.
Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

SECOND-HAND MACHINERY

FOR SALE BY

B. L. Saltzman - 524-526 W. Van Buren St., Chicago, Ill.

LATHES.

18"x10' American.
16"x 5' L. Smith.
10"x 4' Reliable.
Garvin screw machine.
Pratt & Whitney turret lathe, ⅞.

MILLING MACHINES.

Kempsmith No. 1 miller.
Cincinnati No. 1 miller.
Hendey-Lincoln miller.
Whitney hand miller.

TINNERS' TOOLS.

Niagara No. 126 punch & shear.
Niagara No. 536 gap shear.
10' 16-gauge steel brake.
Rollers.
Circular and slitting shears.
30, 36 & 42"—10' foot pwr, sq. shears.

MISCELLANEOUS.

Band saw, 32" & 36", metal.
Grinder, Heald, mag'tic ck. grind'rs.
Motors, Westinghouse ⅛ h. p., 89.
Planer, 24"x24"x6' Whitcomb.
Shapers, 16" Steptoe.
Shaper, 24" Rockford.

Motors, a. c. & d. c., punch presses, drill presses, grinders, hack saws, pulleys, leather belting, shafting and hangers.

FOR SALE BY

The H. A. Smith Machinery Co., - - Syracuse, N. Y.

BORING MILLS.

Gisholt 36".
Gisholt 42", motor drive.

CUTTING-OFF MACHINE.

Hurlbut & Rogers 4".

DRILL PRESSES.

Barnes 34".
Snyder 36", with tapping attach.

RADIAL DRILLS.

Hammond 4' sensitive, with tapping attachment, (3).
Fosdick, 3½' arm.
Fosdick, 5' full univ., motor drive.

GEAR CUTTING MACHINERY.

Fellows No. 62 gear shaper, m. d.
26" Brown & Sharpe No. 3 spur.
Barber-Colman No. 12 gear hobbers, (2).

GRINDERS.

10x72 Landis, motor drive.
12x48 Modern.
16x52 Landis.
Brown & Sharpe No. 23 internal.
Madison (Gisholt) automobile cylinder grinder.

LATHES.

14"x24"x5½' Barnes, gap.
16"x8" Pratt & Whitney.
16"x8" Cisco, with taper.
21"x12" Porter, with raising blocks to 34".
20"x10" Greaves-Klusman, geared head, with raising blocks to 28".
12"x6' Seneca Falls tool room, (3).
Porter-Cable, (3).
Gisholt 16" simplified roughing.

MILLING MACHINES.

Cincinnati No. 3 plain, motor drive.
Brown & Sharpe No. 13, production.
Newton No. 365, spline.
Brown & Sharpe No. 3 vertical, late type.
Brown & Sharpe No. 5 vertical.

PLANERS.

72"x54"x24' Pond, 4 heads.
36"x36"x24' Pond, 4 heads.
26"x26"x 8' Niles.

SHAPERS.

15" Hendey.
20" Cincinnati, back geared.
24" Hendey, motor drive.

AUTOMATIC SCREW MACHINES.

Brown & Sharpe No. OG.
Cleveland 4½", (2).
No. 53 National Acme four-spindle.
No. 55 National Acme four-spindle.

TURRET LATHES.

Warner & Swasey No. 4.
Warner & Swasey No. 6.
Gisholt 21", (3).

MISCELLANEOUS.

Tapping machine, Garvin No. 2-X.
Tapping machine, Garvin No. 2.
Twist drill grinder, Sellers automatic.

FOR SALE BY

Bennett Machinery Co., - 30 Church St., New York City

Drill, 24" Barnes, all geared.
Drills, 14" to 28" Barnes & Rockford
Hack saw, No. 5 Sterling.
Lathe, 18"x8' Reed-Prentice, quick change, taper, double back geared.
Miller, No. 6 Fox, plain, cone head.
Miller, No. 4 Brown & Sharpe, plain.
Pipe machine, 8" Saunders.
Planer, 54"x12' Pond, 4 heads.
Planer, plate, 18' Niles.
Shaper, 20" Walcott, bk. grd., crank.
Turret lathe, 3"x36" Jones & L.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

12"x 5' Hendey, c. r., q. c. g., with pan bed.
14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Monarch, c. r., standard.
14"x 8' Monarch, c.r., stand. pattern.
15"x 6' South Bend, c. r., complete.
16"x 6' South Bend, c. r., complete.
18"x 8' Prentice c. r., l. c. g., chuck.
18"x 8' Schumacher-Boye & Emmes, c. r., 5 step cone, s.b.g., q.c.g.
18"x10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.

TURRET LATHES AND SCREW MACHINES.

No. 2-A W. & S. g. h. tur. lathes.
No. 3-A W. & S. g. h. turret lathe.
1½" Acme screw mche., p. f. to tur.
26" Gisholt heavy duty turret lathe.
2"x24' Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto., (6).
No. 0 Brown & Sharpe auto. (2).
No. 2 Brown & Sharpe auto. (2).
1" Biggs, p. h., a. c. & b. f.
No. 2 Warner & S. p.h. screw mche., a. c. & b. f., p. f. to turret.
No. 4 W. & S., p. h., a. c. & b. f.
No. 2 W. & S., p. h., a. c. and b. f.
No. 4 W. & S., g. f. h., a. c. and b. f. (4).
18" Libby, factory rebuilt.
No. 2-G B. & S. automatics (3).
No. 2 B. & S. turret forming (2).

DRILLING MACHINES.

20" W. F. & John Barnes, stationary head, b.g. and p. f. (2).
24" Baker heavy duty.
24" Barnes "Camel Back," b.g., p.f.
4-spindle Leland-Gifford, h. s., b. b., with p. f. to each spindle.
2½" Mueller plain radial with t. a.
6' arm Western radial, with tap. att., arranged for motor drive.
29" Superior, stationary hd., p. l. f.
20" Hamilton, w. and l.
20" W. F. & John Barnes, stationary head, p. l. f., (2).
12" Mechanics, friction driven.
6-sp. 12" Leland-G., h. s., b. b. (6).
12" 3-sp. Leland-G., h. s., b. b. (4).
14" 3-sp. Leland-G., h. s., b. b. (3).
14" 4-sp. Leland-G., h. s., b. b. (3).
14" 2-spdle. Avey, h.s., b.b., (2).
14" 3-spdl. Henry & W., h. s., b. b.
14" 4-spdl. Henry & W., h. s., b. b.

MILLING MACHINES.

No. 0 Bickett, hand, bench type (3).
Toledo hand milling machines (2).
No. 2-B B. & S. plain, constant s. dr.
No. 1½ Rockford plain, with div. hd.
No. 24 Ohio plain b. g. complete.
No. 1-Y Brown & Sharpe plain.

GRINDERS.

No. 10 B. & S. plain, (2).
No. 6-A Bryant internal.
No. 2 B. & S. surface.
No. 3 Brown & Sharpe universal.
LaSalle combination pl. and surface.
No. 1 LeBlond cutter grinder.
Type "DE" Hisey-Wolf internal.
No. 11 B. & S. plain grinders, (4).
Plain emery wh'l stand with column.

SHAPERS AND PLANERS.

16" Hendey friction, (2).
16" Ohio plain crank.
18" Walcott plain crank.
22"x22"x 5' Putnam planers (2).
24"x24"x 6' Gray planer.

METAL CUTTING TOOLS AND SQUARING SHEARS.

Higley cold saw.
3" new Davis cutting-off machine.
30" Niagara foot power squar. shear.

GEAR CUTTERS AND HOBBERS.

26" & 36" No. 3 Brown & S. auto.
No. 13 Brown & Sharpe auto.
No. 12 Barber-Colman hobbers.
No. 12 B. & S., bevel, (2).

HAMMERS.

Quickwork body hammer.

FOR SALE BY

Clinton Machinery Co., - 128 S. Clinton St., Chicago, Ill.

SHAPERS.

15" Hendey friction.....$100.
14" Smith & Mills crank..... 225.
16" Steptoe crank..... 185.
17" Smith & Mills b. g. crank...$400.
20" American heavy duty univ. table b. g. crank ..... 650.

LATHES.

7"x30" new Daltons.....$148.
12"x5' Seneca F., c. r., complete 100.
13"x5' Carroll & J., semi q. c.... 150.
14"x6' Reed, c. r., taper att ..... 175.
19"x8' Springfield, c. r., semi q. c., d. b. g., complete.....$275.
20"x8' Walcott, q. c. g., d. b. g., fully equipped, like new..... 375.

PUNCH PRESSES.

No. 1 Walsh, o. b. i. .....$135.
No. 2 American Can, o. b. i. ..... 190.
No. 3 Walsh, o. b. i. .....$300.
No. 5 Niagara, o. b. i. ..... 375.

MILLING MACHINES.

No. 2½ Rock'd univ., fully equip $1050.
No. 1 B. & S. univ., fully equip 500.
No. 0 Steptoe, b. g., p. f.....$175.
Hardinge bench miller..... 125.

DRILL PRESSES AND RADIALS.

New bench drills, with chuck..$ 20.
14" new Champion, l. f..... 85.
20" Canedy-Otto, h. & l. f..... 55.
20" Rockford, hand & lever fd. 60.
30" Sibley, with tapping att., b. g., p. f., and hand & lever fd.. 275.
4-spdl. h. s. Leland-Gifford, tapping attach. on one spindle...$375.
Single spindle Leland-Gifford... 100.
4' American radial, with tapping attach. and swinging table..... 375.

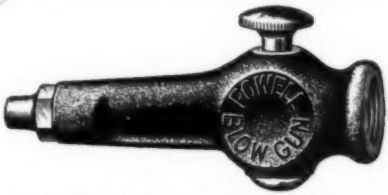
MISCELLANEOUS.

Bench saws, 13x18 tilting tbl.$ 28.40.
Bolt cutter, 1" Geometric..... 100.00.
Grinder, No. 2 LaSalle surface, with chuck..... 400 00.
Grinder, 8" Heald ring surf. 100.00.
Grinder, No. 1 Norton.....$175.
Oil separator, No. 2 American, 2540 cu. in. capacity..... 150.
Screw driver, power..... 85.
Spot welder, 10 k. w. Taylor... 225.

POWELL BLOW GUN

Designed to dispense AIR with utmost economy

Used for cleaning machines, machine tools and work benches



Made with different tips for special requirements.

Circular on request.

The Wm. Powell Co.

2525 Spring Grove Ave., Cincinnati, O.

"Factory" Rebuilt Tools

Every Machine Rebuilt in a Machine Tool Factory

The following tools are exceptional bargains. The majority of them have been used exclusively in our own plant, where they have received the very best of care and attention, and all of them have been completely overhauled and rebuilt in our own shop, consequently they cannot be classed with the average second-hand machine. They are factory rebuilt tools of the very highest quality, with many real bargains.

LATHES

1—16"x 8' American, quick change gear, single back geared head.
1—16"x 8' Hamilton, loose change gear, single back geared head.
1—18"x 8' American High Duty, quick change gear, with patented grd. head.
1—18"x10' American High Duty, quick change gear, with patented grd. head.
1—18"x10' American quick change gear lathe, single back geared head.
1—20"x12' American, quick change gear, with single back geared head.
1—24"x12' Greaves-Klusman Heavy Pattern, qck. chg. gr., dbl. bk. grd. hd.
1—30"x10' American High Duty qck. chg. gr. with double back geared head.

DRILLS

1—3' American Ball Bearing Sen. Radial, with elev. table and tapping att.
1—3' Reed-Prentice Plain Radial, with tapping att. and gear box drive.
1—3' Mueller Plain Radial, with tapping attachment and gear box drive.
1—4' Fosdick plain radial drill with tapping attachment, cone pulley drive.
2—5' Bickford Plain Radial, with tapping attachment and gear box drive.
1—5½' Pond plain radial drill with cone pulley drive.
1—6' Bickford Plain Radial, with tapping attachment and gear box drive.
1—6' Fosdick Plain Radial, with tapping attachment and gear box drive.
1—6' American full Universal Radial, gear box drive.
1—8 spindle Niles-Bement-Pond Boiler Plate Drill.
1—No. 2 Baush Multiple Spindle (8) High Speed Drill.

MILLING MACHINES

1—No. 2½ LeBlond Plain Milling Machine, 3-step cone, friction back gears.
2—No. 3 LeBlond Plain, with 3-step cone, friction back gears.
1—No. 3 Cincinnati Vertical Milling Machine with single pulley drive.

PLANERS

1—36"x36"x14' American Pl. with 2 hds. on cross rail and 2 sp. countershaft.
1—42"x36"x28' American, with 2 hds. on cross rail, 2 side hds., 2-speed c. s.
1—48"x48"x26' American Heavy Pattern Planer with two heads on cross rail, two side heads, and two speed countershaft.
1—72"x60"x31' Pond Planer with two heads on cross rail and countershaft.

SHAPER

1—16" American Back Geared Crank with table support, cone pulley drive.

TURRET LATHES

1—2"x24" Jones & Lamson Flat Turret Lathe, with 3-step cone, friction hd.
1—2½"x26" Acme Turret Lathe, 3-step cone, friction head.

GEAR CUTTERS

2—No. 3 (26"x8") Brown & Sharpe Automatic Gear Cutters.

Also a number of good "buys" in miscellaneous tools

Many of the above tools have been used very little, and are practically the equivalent of new machines. There are many unusual and exceptional bargains that somebody is going to get the benefit of. Write us immediately for descriptions, illustrations and prices, before these bargains are gone.

The American Tool Works Co.

Cincinnati, U. S. A.

Builders of LATHES—SHAPERS—RADIAL DRILLS

Factory Rebuilt Machines

Guaranteed

CINCINNATI ACME TURRET MACHINERY

3—1"x7" plain head screw machines without power feed to turret.

4—1"x7" plain head screw machines with power feed to turret.

2—1½"x9" friction back geared screw machines with power feed to turret.

1—2¼"x26" flat turret lathe (cone head type) with bar equipment.

2—2¼"x26" flat turret lathes (cone head type) with plain equipment.

NOTE: Screw machine equipment includes automatic chuck, one collet, stock feed, pan, pump and piping and countershaft.

The Acme Machine Tool Co.
Cincinnati, Ohio

FOR SALE

5—3 SPINDLE National High Speed **DRILL PRESSES $110.00** each.

6—NO. 1½ CINCINNATI Back Geared Pl. **MILLING MACHINES $275.00** each.

4 Spindle **NATIONAL ACME** Screw Machines

6—No. 52—	⅞" Capacity	$425.00	each.
2—No. 53—	1⅜" "	475.00	"
2—No. 55—	1⅝" "	600.00	"
3—No. 56—	2¼" "	650.00	"

CINCINNATI AUTOMATIC MACHINE CO., Cincinnati, Ohio

FOR SALE
LATHES

24"x14' 3-Step Cone, Double Back Gear Boye & Emmes Lathe

$1615.00

22"x14' Greaves & Klusman Standard Lathe with taper attachment and two steady rests

$700.00

NET f. o. b. Cincinnati

THE

Boye & Emmes Machine Tool Co.

2245 Spring Grove Ave.

CINCINNATI, OHIO

Many Real Bargains

42" Bullard Vertical Boring Mill, 2 heads.
6½' Niles full Universal Radial, with motor.
3—30" Cincinnati-Bickford Radials, (nearly new).
4' Mueller Radial, gear box, fine shape.
28"x14' LeBlond loose change Lathe, raised to 34".
40"x16' Niles-Bement-Pond triple geared Lathe, late type, with motor.
42"x20' Niles Lathe, triple geared.
48"x28' Niles Lathe, triple geared.
24" Gisholt Turret Lathe, $375.
28" Gisholt Turret Lathe, $475.
54" Niles Horizontal Boring Mill, 4" bar.
New Britain Screw Machine, 6 spindle, 1⅝"x7".
Nos. 60 and 65 Heald Grinders.
10' Ohl Power Brake.

Punch Presses and Shears

No. 5 Toledo Inclinable.
No. 6 Rockford, geared.
No. 2 East Iron, straight side.
No. 19 Bliss Inclinable.
No. 3 Cleveland Inclinable.
Style A Long & Allstatter single end Punch and Shear, 14" throat, 2"x1⅛".
Quickwork Circle Shears (3 sizes).
No. 55 Niagara Circle Shears.
Etc.

Many Lathes from 11" to 66" swing; Planers, Drills, Shapers, Gear Cutters, Hammers, Boring Mills, Grinders, Milling Machines, Compressors, Boilers, Engines, Pumps, Etc., Etc.

Norton-Broadway Machinery Co.

238 Broadway, Cincinnati, Ohio

NOTICE—After October 1st, will be located at our New Warehouse and Store, 6th and Baymiller Sts.

650—Surplus Machine Tools—650

AT THE FACTORY OF

Taft-Pierce Mfg. Co., Woonsocket, R. I.

Famous for the manufacture of jigs, tools, fixtures and high grade experimental work.

These offerings represent a surplus resulting from re-arrangement and consolidation of departments.

It is not possible to list all items, but here are a few of them:--

BROWN & SHARPE Milling Machines, Grinders, Turret Lathes, Automatic Screw Machines, Surface Grinders.

MILWAUKEE Milling Machines.

CINCINNATI Milling Machines.

CLEVELAND, GRIDLEY and NATIONAL ACME AUTOMATICS.

POTTER & JOHNSTON AUTOMATICS.

GRAY, CINCINNATI, CLEVELAND, WOODWARD & POWELL PLANERS.

UNIVERSAL HORIZONTAL BORING MACHINES.

BLANCHARD GRINDERS.

WARNER & SWASEY TURRET LATHES AND SCREW MACHINES.

GISHOLT TURRET LATHES.

HANSON-WHITNEY SLOTTING MACHINE.

PORTER-CABLE LATHES.

ENGINE LATHES from 12" to 16".

Arbor Presses, Tapping Machines, Sensitive Drills, Bench Lathes, Lincoln Millers, Cutting-Off Machines, Gas Furnaces, Power Presses, Radial Drills. Hardly an item you can mention that is not represented in this list.

Our Salesmen will be on the Premises on and after AUGUST 24th

Make all inquiries to us, or better still—

Come to Woonsocket

Hill, Clarke & Company, Inc.

The Oldest Machinery House in New England

126 Oliver Street, Boston 9, Mass.

NEW 3 PHASE MOTORS CHEAP. 3 H. P. $57.50; 5 H. P. $67.50

LATHES

12"x 5' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new.
14"x 8' Young.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 8' Sidney, double back geared.
16"x 8' Sidney, double back geared.
18"x10' American, quick change.
18"x 8' Bradford, h. a., steady rest.
20"x10' Prentice, taper.
20"x10' Hamilton, rapid production.
24"x24' Prentice, with raising block.
25"x12' Sidney heavy duty.
28"x 8' Bridgeford, heavy duty.
8x60" & 10x72" Fitchburg Lo-Swing.

TURRET LATHES and SCREW MACHINES

No. 4 Defiance hand screw machine.
No. 4 Woods Tilted Turret.
1½" Mulholland.
2x24 and 3x36 J. & L.
No. 3-B Foster, 5" capacity, new.
Warner & Swasey No. 2.
Nos. 56 & 56 National Acme auto.
6" Gridley single spindle, automatic.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American, tool room.
16" & 24" Barker, b. g. crank.
16" O. & S. b. g. crank, new.

PLANERS

22"x22"x 5' Cincinnati.
24"x24"x 6' Gray.
28"x26"x10' Putnam, 2 heads.
26"x26"x10 Gray, 1 head.
36"x36"x18' Pond.

PRESSES

Nos. 3-A & 6-A Willard inclinable.
No. 1 Toledo inclinable.
Nos. 1½, 2, 2½ & 4 Robinson.
Emco, bench, for radio parts.
No. 35 Niagara straight side.
Perkins, dbl. housing, wt. 4,000 lbs.

DRILLS and RADIALS

3½' Silver, sgl. pulley, gear box dr.
3' & 4½' Morris plain gear box.
4' Universal Radial Drill Co. plain.
Electric drills, Black & Decker.
22", 24", 26", 28" and 32", sliding hd.
20"—24" & 26" Barnes, all geared.
4-spindle Reed sensitive.
Electric drills, Thor, all sizes.

MILLING MACHINES

No. 1 Kempsmith universal.
No. 2 Kempsmith universal.
U. S. and Whitney hand.
No. 25 Becker plain, power feed.
No. 3 Kempsmith univ. and plain.
No. 3 LeBlond, with vertical attach.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 7 Becker Lincoln type.
Oesterlein 24x7½x18 plain.

GRINDERS

Nos. 1 & 78 W. & M. surface.
No. 2 W. & P. 10x30 universal.
6"x15" Fitchburg plain.
12x36 Cincinnati universal.
12x42" & 16"x30" Landis plain.
12"x72" Brown & Sharpe plain.
36" and 66" Yates plate.
Perfection cylinder.
No. 60 Heald cylinder.
Schmitt cylinder grinder.
No. 3 Ohio universal & tool.
No. 4 Gardner 20" double disc.
No. 20 Bryant, chucking.
Capital internal, new, 2"x3".

MISCELLANEOUS

Band saw, metal, Klemm.
Band saws, Napier 4"x4", 10"x10".
Bending rolls, 7' for ⅜" plate.
Boring mill, Colburn No. 3, tur. hd.
Boring mill, 54" & 60" Colburn, 2 hds.
Brake, 10', 18-gauge metal.
Broaching machine, No. 3 LaPointe.
Cold saw, Burr, 3" capacity.
Compressors, 5x4, 8x5 and 12x10.
Drawing tables, adjust., 42"x6' top.
Gear cutter, 26" No. 3 B. & S.
Gear millers, Bilton No. 1, (5).
Hammer, 40 lb. Bradley, helve.
Hammer, 150 lb. Standard drop.
Oil separator, Springfield.
Pipe machines, 2", 4", 6" & 12".
Pumps, Gould triplex, 6½x8" & 7x8".
Punch & shear ⅝ by ⅝, 10" throat.
Riveting hammers, No. 3-A h. sp. (2).
Scale, 1500 lb. Toledo, dial type.
Sceleroscope, Shore.
Shear, 5' Robinson, for 10 gauge.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell 60".
Slotter, 18" Bement-Miles.
Tapping mche., ⅝" Rickert-Shafer.
Tapping machine, Acme 6-spindle.
Threading mche., W. & P. 2-spindle.

THE OSBORNE & SEXTON MACHINERY COMPANY
COLUMBUS DEPT. H. OHIO

THE MOTCH AND MERRYWEATHER MACHINERY CO

CLEVELAND
DETROIT CINCINNATI
PITTSBURGH

54" Bullard Boring Mill.

6' American Radial Drill.

24" Cincinnati Bickford Sliding Head Drill.

No. 4—6-spindle Foote-Burt Drill.

No. 16 Floor Motor Drive Blanchard Grinder.

No. 16A Blanchard Automatic Grinder.

42"x32' American Triple Geared, Motor Driven Lathe.

36"x18' Lodge & Shipley Triple Geared Selective Head Lathe.

No. 4 Cincinnati Vertical High Power Milling Machine.

No. 26 Toledo Cam Drawing Press—8" stroke.

24" Gould & Eberhardt Shaper—Single Pulley Drive.

15" Newton Vertical Slotter, arranged for Motor Drive.

These are twelve of three hundred machines, of every size and description, stocked in our Cleveland warehouse. All overhauled machines carry our guarantee. We invite your inquiries and inspection at any time.

FOR SALE

Used Cincinnati Lathes

Quick Change, 3-Step Cone, Double Back Gears

Accuracy guaranteed same as new

16 in. x 6 ft.	$ 550.00
18 in. x 8 ft.	$ 690.00
24 in. x 10 ft.	$1380.00

Also offer 4 ft. Dreses Radial Drill, 90% new

The Cincinnati Lathe & Tool Co.

3207 North St., Cincinnati, Ohio

REAL BARGAINS

3/4" Capacity Cataract Precision Lathe	$ 90.
18"x8' American Lathe, quick change gear	225.
Leland-Gifford H. S. Single Spindle Drill Press	85.
National Hand Miller, Bench Type	45.
No. 2 Kempsmith Plain Miller	300.
No. 1 Oesterlein Miller	200.
No. 12 Besly Disc Grinder, press and extra discs	175.
Yoder Serpentine Shear, 60" Throat	125.
10' Ryerson Heavy Duty Steel Brake	200.
No. 1 American Rip & Cross Cut Saw, tilting table	185.

Guaranteed Rebuilt Belting, 6 1/2 cents Per Inch.

Electric Motors, All Sizes—A. C. & D. C.

40" Direct Connected Ilg Blower, 3P., 60C., 220 V.
45" Direct Connected Ilg Blower, 3P., 60C., 220 V.
15 H. P. Allis Chalmers Variable Speed Slip Ring Motor, 220 V., 60C., 3P.
7 1/2 H. P. Wagner Variable Speed Slip Ring Motor, 220 V., 60C., 3P.
110 or 220 Volt Universal Electric Drills, 3/8 cap., $22.50.
Ceiling Fans and Exhaust Fans.

MIDLAND EQUIPMENT CO.

612 W. Van Buren St., Chicago, Ill.

MILLING MACHINES

No. 3 Cinti high pwr. univ., sgl. pul.
No. 4 R.K. LeBlond univ., cone pul.
No. 3-A B. & S univ., sgl. pulley.
No. 3 R.K. LeBlond univ., cone pul.
No. 2 Garvin univ., cone pulley.
No. 3 Cinti. hi-pwr. pl., sgl. pulley.
No. 3-B hvy. B. & S. pl., sgl. pulley.
No. 2 Cinti. high pwr. pl., sgl. pul.
No. 2-B B. & S. pl., single pulley.
No. 1-B Milwaukee pl., sgl. pulley.
No. 1½ Cinti. plain, cone pulley.
Becker large hand miller.
No. 3 Cinti high pwr vert., sgl. pul.
28" Cinti. duplex, semi-automatic.

LATHES

36"x22' Putnam, tri. g., semi q. c. g.
30"x16' Houston Stanwood & G., q.c.
36"x12' R. K. LeBlond, qck. chg.
30"x12' American standard change.
24"x10' R. K. LeBlond, q. c.
20"x10' Bradford, standard change.
20"x 8' Hendey, qck. ch., grd. head.
18"x10' Greaves & Klusman, q c.
18"x 8' Lodge & Shipley, q. c. g.
16"x 8' Hendey, q c., with taper.
16"x 8' Hamilton, q c.
14"x 6' Hendey tool room lathe, q.c., with taper, relieving and collet atts.
14"x 8' Hamilton tool room lathe, q. c., with taper, relieving and collet attachments.

TURRET LATHES & SCREW MACHINES

3¼"x36" Cincinnati-Acme flat turret, geared head.
No. 4 Warner & S. tur. screw mche.
No. 4 B. & S. turret screw mche.
No. 2½ S. G Garvin turret screw machine, new.
No. 1 S. P. Garvin turret screw machine, new.

GRINDERS

14" P. & W. vertical surface, with magnetic chuck.
No. 2 B. & S surface, with mag.chk.
No. 60 Heald cyl., complete equip.
6"x32" Norton plain cylindrical.
6"x18' Landis plain cylindrical.
No. 2 B. & S. univ. cylindrical.
No. 1 B. & S. univ. cylindrical.
No. 2 Ohio univ. tool & cutter.
No. 1½ Cinti univ. tool & cutter.

GEAR CUTTERS

No. 4 48" B. & S. auto., spur.
36" Gould & Eberhardt auto., spur.
26" Cincinnati auto., spur.
No. 12 Brown & Sharpe auto. spur & bevel.
No. 12 Barber-Colman gear hobber.

DRILLING MACHINES

4' Niles Tool Wks. univ. radial, m.d.
3½' Fosdick plain radial, m. d.
26" Prentice upright, gear box drive.
24" Cinti-Bickford upright, gear box drive and tapping.
24" Milwaukee upright.
24" Rockford upright.
23" Rockford upright, with tapping.
20" Kern upright, with tapping.
6-sp. H. & W. high speed b. b. sens.
4 spindle Prentice Bros. high speed b. b. sensitive.
2-sp. H. & W. h. s., b. b., power fd.
2-sp. Leland-Gifford h s., b. b.,p.f.
Avey high speed ball bearing sens.
Sipp high spd. ball bearing q.c. sens.

SHAPERS AND PLANERS

28" Queen City b. g. crank, gear box drive, new.
24" American Tool Wks. b. g. crank, motor dr., with motor, latest type.
24" Wm. Barker b. g. crank, new.
16" Gould & E. b. g. crk. high duty.
16" Milwaukee back geared crank.
30"x30"x8' Cinti planer, belt dr., 1 hd.
30"x30"x8' G. A. Gray planer, belt drive, 1 head.

MISCELLANEOUS

Bolt threading machine, 2" Landis.
Bolt threading machine, 1" National, with Landis die head.
Bolt threading mche., ¾" Acme dbl.sp.
Broaching machine, No. 3 J. N. LaPointe, late iype, fric. pulley dr.
Electric spot welder, Federal Jr.
Hand brake, 8' J. M. Robinson, cast iron, 18 ga. and lighter.
Keyseater, No 2 Mitts & M., belt dr.
Keyseater, No. 3 Baker Bros., belt dr.
Pipe machine, 2" Williams, power.
Pipe machine, 4" Jarecki, power.
Power press, No. 6 Niagara o. b. i.
Power press, No. 4 Toledo o. b. i.
Power press, No. 3½ Toledo o. b. i.
Tapping mche., No. 1 Garvin auto., two spindle, new.

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14"x 6' Monarch q. c. g.
16"x 6' Hendey q. c. g.
16"x 8' Bradford q. c. g.
19"x12' LeBlond plain turning.
20"x10' Davis q. c. g.
21"x12' LeBlond plain turning.
21"x12' LeBlond q. c. g.
24"x12' American q. c. g.
30"x10' LeBlond crankshaft grd. hd.
30"x16' LeBlond q. c. g.
36"x18' Pond triple grd.
36"x23' Pond triple grd.
36"x30 Amer. grd. hd., q.c.g., 2 carr.
36"x32' Bridgeford grd. hd., q. c. g.
36"x40' Bridgeford boring h. d.
36"x56' Bridgeford boring m. d.
39"x48' Amalgamated boring m. d.
39"x64' Amalgamated boring m. d.
42"x22' Amer. grd. hd., q. c. g., t. a.
42"x23' Putnam grd. hd., q. c. g.
42"x30' Amer. grd. hd., q.c g., 2 carr.
42"x31' Putnam grd. hd., q. c. g.
48"x40' Pond triple geared.
48"x44' Bridgeford boring m. d.
48"x50' Amalgamated boring m. d.
48"x24' Bridgeford grd. hd., q. c. g.
96"x40' Fifield triple geared.

TURRET LATHES

No. 2 Wood 1" cap.
No. 3 Wood 1¼" cap.
No. 4 Wood 1½" cap.
21" Gisholt 2" cap.
24" Gisholt 6½" cap.
24" Steinle 4" cap.
28" N. B. P. 4½" cap.

COLD SAWS

90" Newton Cutting-Off.
62" Newton Cutting-Off.
36" Newton Cutting-Off.
29" Newton Cutting-Off.

PLANERS

22"x22"x 5' Gray, 1 head.
24"x24"x 6' Gray, 1 head.
24"-24"x 6' Cincinnati, 1 head.
24"x24"x 6' Lodge & Davis, 1 hd.
24"x24"x 8' W. & P., 1 head.
30"x30"x 8' Ohio, 2 heads.
30"x30"x10' Cincinnati, 1 head.
36"x36"x12' Powell, 2 heads.
36"x32"x12' Pond, 1 head.
48"x48"x 8' Sellers, 1 head.
48"x48"x14' Patch, 4 heads m. d.
48"x48"x18' New Haven, 2 heads.
48"x48"x20' N. P. P., 2 heads.
54"x54"x12' Pond, 2 heads.
48" N. B. P. rotary.

SHAPERS

14" Betts double head.
14" Fitchburg.
14" Flather.
14" Gould & Eberhardt.
14" Smith & Mills.
16" Gould & Eberhardt.
16" Flather.
16" Stockbridge.
20" Rockford.
24" Steptoe.
30" Norton.

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Style D. L. & A. geared.
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No. 4 P. & W. trimming 3" str.
No. 2 P. & W. trimming 3" str.
No. 4 Crosby Stiles 2½" str.
No. 6 American o. b. t. 3" str.
No. 55 D.G.G. Ferracute grd. 16"str.
No. 56 D.G G. Ferracute grd. 16"str.
No. E57 Ferracute grd. 2½" str.
No. 58 Toledo trimming 6" str.
No. 74½ Bliss trimming 6" str.
No. 75½ Bliss trimming 6" str.
No. D201 Ferracute grd. 16" str.
No. 256 Toledo s. a. 4" str.
No. 5 Bliss Stiles 1½ str.

MILLERS

24"x24"x12' Ingersoll horiz. adj. rail.
No. 7H Becker planer type.
No. 2½ Hendey planer type.
No. 2A Milwaukee plain.
No. 3 Milwaukee plain.
No. 3H Milwaukee plain.
No. 20 Ohio universal slotting att.
No. 25 Ohio universal vertical att.
No. 29 Ohio universal vertical att.
No. 34 Ohio universal vertical att.
No. 3 Brown & Sharpe vert. a. p. d.
No. 5C Becker vertical.
No. 5B Beckey vertical.
No. 6 Becker vertical.
No. 22 Garvin vertical.
No. 1 Newton vertical.
No. 2 P. & W. die sinkers.
No. 1 P. & W. die sinkers.
2-spindle P. & W. die sinkers.

MISCELLANEOUS

No. 1 Cleve. horz. I beam bender.
3-spdl. Scotch boiler drills.
8' H. & G. mangling rolls.
30" Lysholm plate punch table.
20" Lysholm plate punch table.
38"x54" Weatherson spacing table.
8"x8"x⅛" H. & J. angle planing mch.
H. & J. channel & bar bevel'g mch.

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Drilling Machine, 5' Prentice Radial, No. 5 Morse Taper.
Drilling Machine, 5' Western Radial, No. 5 Taper, Motor Drive.
Drilling Machine, 6' Prentice Plain, No. 5 Taper.
Grinder, No. 4 Gardner Disc, 24" Blades.
Hammer, Bell Steam, Complete.
Lathe, 26"x12' Bridgeford, Quick Change Gears, Dbl. Bk. Grd.
Lathe, 27"x26' Schumacher & Boye, Qk. Ch. Grs.. Dbl. Bk. Grd.
Lathe, 33"x12' Pond, Triple Geared.
Lathe, 38"x50'6" New Haven Double Head.
Lathe, 42"x31' Pond, Triple Geared.
Lathe, 16" Springfield Monitor Lathe, Friction Head.
Pipe Machine, 2" Cox, Capacity 1/2 to 2".
Pipe Machine, 8" Cox, Capacity 2 1/2 to 8".
Pipe Machine, 12" Cox, Capacity 6" to 12".
Pipe Machine, 16" Cox, Motor Drive.
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1—Cincinnati No. 3 Plain Milling Mche. with overhanging arm. Table 12"x3'11". As is.$ 250.

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12' BETTS Vertical, cone drive, geared feeds	92%	new
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110" BETTS Vertical, cone drive	90%	"
84" BULLARD Vertical, motor drive, Q. C. feed	90%	"
60" CINCINNATI Vertical Rapid Production, motor drive	92%	"
54" BULLARD Vertical Maxi. Mill, motor drive	90%	"
34" KING Vertical, 5-hole turret, belt drive	90%	"
24" BULLARD New Era, side head	90%	"
DETRICK & HARVEY Horizontal, 7" bar, heavy duty	95%	"
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LATHES

84"x40' PUTNAM, geared head, heavy duty	90%	new
76"x35' POND Type B G., variable speed motor drive	85%	"
48"x28' POND Type B. G., variable speed motor drive	88%	"
42"x36' BRIDGEFORD, geared head, motor dr., 2 carriages	92%	"
36"x36' BRIDGEFORD, geared head, motor dr., 2 carriages	92%	"
36"x18' LODGE & SHIPLEY, S. P. drive, 18 speeds	90%	"

24", 20", 18" and 16" Lathes—all makes.

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MISCELLANEOUS

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36"x36"x12' BICKETT Planer, 1 head, belted motor drive	95%	"
120"x120"x25' BEMENT Planer, 4 heads, rev. motor drive	90%	"

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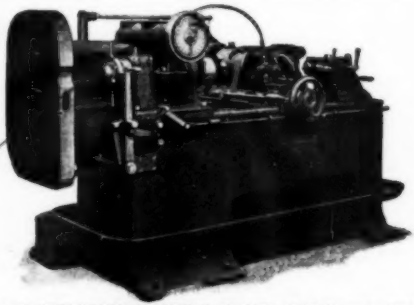

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26—48″ swing, 12′ bed.
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NEW "2-in-1" LATHES

12-ft. to 32-ft. Beds

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15″ sw., 6′ bed, Sebastian.
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21″ sw., 12′ bed, McCabe, q. c.
24″ sw., 14′ bed, Prentice.
28″ sw., 14′ bed, Niles-Bement-P.
32″ sw., 20′ bed, McCabe, q. c.
42″ sw., 16′ bed, McCabe, geared head, quick change.
50″ sw., 20′ bed, Pond.
50″ swing, 24′ bed, Bement-Miles, triple geared.
60″ sw., 28′ bed, Wickes.
84″ sw., 46′ bed, Putnam, motor-dr.
110″ swing, 42′ bed, Bement-Miles, 5″ blocks.

PLANERS

84″x60″x30′ Pond, 4 heads.
72″x72″x24′ Niles, 4 heads.
54″x54″x12′ Pond, 4 heads.
48″x48″x15′ Pond, 2 heads.
36″x36″x12′ Gray, 2 heads.
26″x26″x 6′ Niles, 1 head.

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12″ stroke, Smith & Mills Shaper.
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"IM" Q. & C. Cold Cut-Off Saw.
25 lb. Dupont Hammer.
50 lb. Little Giant Power Hammer.
42″ Bullard Boring Mill.
No. 3 Baker Keyseater.
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4′ arm Radial Drill, speed box.
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No. 22 Brainerd Plain Milling Mch.
No. 1½ Landis Universal Grinder.
Bridgeport Roll Grinder.
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2½″ Bar Horizontal Boring Mill.
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19″ Gap Air Riveter.
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3—Hack Saws.

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16" South Bend Lathe.

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No. 33 Swaine o. b. i., (four).
No. 31 Toledo solid back.
No. 77½ Bliss, dble. geared, 5" stroke.

MILLING MACHINES.

No. 0 Rockford, power feed.
No. 25 Becker, plain (3).
No. 2-B Brown & Sharpe, plain.
No. 2 B hvy. Brown & Sharpe, pl.
No. 3 Cincinnati, plain (3).
No. 3 Kempsmith, plain.
No. 3 H LeBlond, plain, vert. att.
No. 3 Cincinnati high power vert.
No. 5 B Becker, vertical.
No. 6 Becker vertical.
No. 3 Pratt & Whitney die sinker.
No. 6 Whitney hand (3).

DRILLING MACHINES.

No. 1½ Avey b. b., 1 and 2 spindle.
28" Hamilton and Aurora drills.
36" Aurora drills. (2).
36" Cincinnati, tapping attach.
5' Reed-Prentice plain radial.
36" American sensitive radial.
No. 2 Foote-Burt 4-spindle gang.

LATHES.

14"x 8' Fay & Scott, taper attach.
16"x 6' Reed-Prentice. sgl. pul. dr.
18"x 7' Chard, d. b. g.
18"x 9' Bell, d. b. g.
20"x 8' Reed, with 220 v., d. c. mtr.
20"x 8' Hamilton, d. b. g.
20"x 8' Lodge & Shipley, grd. hd., q. c.
20"x10' American, geared head, q. c.
22"x10' Davis, d. b. g., q. c.
34"x10' Putnam, heavy type.
38"x14' Fifield, heavy pattern.

SHAPERS AND PLANERS.

24" Kelly back geared shaper.
26"x6' Pond planer.
30"x8' Ohio planer, heavy pattern.
36"x36"x15' Betts planer, 2 hds.

GRINDERS.

6"x32" Norton grinder.
14"x72" Norton grinder.
16"x48" Landis crank pin, self contained.
12"x32" Landis universal.
16"x96" Landis plain.
No. 2 Oesterlein tool & cutter.
No. 2 Woods tool & cutter.
No. 1 Cincinnati tool grinders (3).
P. & W. vertical surface.

SCREW MACHINES AND TURRET LATHES.

⅝-⅞ Cleveland model A, ser. No. 27360.
2" Cleveland model A, ser. No. 26302.
⅝" Cleveland model A. (2).
No. 1 Garvin hand screw machine.
No. 3 Superior hand screw mche.
No. 4 Milholland hand screw mche.
16" Dreses Fox lathe.
18" Springfield and Am. Fox lathes.
No. 3 Warner & Swasey Fox lathe.
3x36 Jones & Lamson.
21" Gisholt turret lathe.
20x8 Fay & Scott univ. tur. lathe.
No. 3 Pratt & Whitney turret lathe, 3" hole in spindle.

BORING MILLS.

30" Bullard, single turret head.
36" Niles two heads.
42" Bullard, motor drive, 2 heads.
2½" Binsse horiz. boring machine.

24" and 36" Bullard Vertical Turret Lathes, excellent condition.

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4—Bullard 24" New Era type.
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15—Allen 1, 2, 4 & 6 spindle.
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1—Natco No. 30, 12 spindle.
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1—New Baush No. 4, 56 sp.
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2—Cleveland 2½" Model A.
19—Cleveland ⅜", ⅞" cap., 1¼".
1—Cleveland 7⅛" automatic.
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1—New Britain 1x8 bar mche.
9—New Britain Nos. 24, 33 and No. 34 chucking.
1—New Britain 1⅛x7.

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4—Hercules 8".
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1—Brown & Sharpe No. 13.
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50"x12" Gould & Eberhardt, spur, with rack cutting attachment.
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8"x30" Modern plain cylindrical.
10"x72" Norton plain cylindrical.
12"x48" Cincinnati pl. cylindrical.
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16"x8' Von Wyck, 5-step, c. r.
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18"x13' Lehmann 3-step, quick chge., compound rest.
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60" Faceplate lathe.

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No. 1½ Cincinnati plain, cone.
No. 2 Cincinnati plain, cone.
No. 3 Cincinnati plain, high power.
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No. 4 Becker-Brainerd vertical.
No. 6 Becker-Brainerd vertical.
Putnam, Lincoln type (3).

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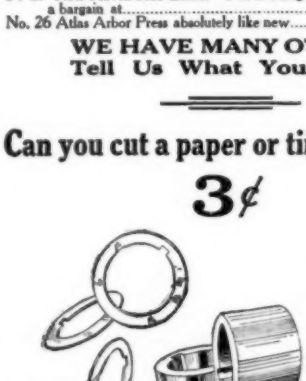

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Lewthwaite Mchc. Co., T. H. 417E. 31st., N. Y.
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Pedrick Tool & Machine Co., Philadelphia

Bolt and Nut Machinery
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Boring Bars
Pedrick Tool & Machine Co., Philadelphia

Boring Bars, Cylinder
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Boring, Drilling & Milling Machines
Landis Tool Co., Waynesboro, Pa.

Boring Machines, Horizontal
Avey Drilling Machine Co., Cincinnati
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Pedrick Tool & Machine Co., Philadelphia
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Burnishing Equipment, Ball
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Chains, Power Transmission
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Chucks, Collet
Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Bertesu Ave., Chicago

Chucks, Drill
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Jacobs Mfg. Co., Hartford, Conn.
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Titan Tool Co., Erie, Pa.

Chucks, Drill and Tap
Peter Bros. Mfg. Co., Algonquin, Ill.
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Chucks, Keyway Cutting
Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Wrenchless
Thomas Elevator Co., 31 S. Hoyne Ave., Chicago

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Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

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Edgemont Machine Co., Dayton, O.

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Burke Machine Tool Co., Conneaut, Ohio
Peter Bros. Mfg. Co., Algonquin, Ill.

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Hardinge Brothers, Inc., 1770 Bertesu Ave., Chicago

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Wallace Brothers, 160 N. Wells St., Chicago

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Bignall & Keeler Mchc. Wks., Edwardsville, Ill.

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United States Drill Head Co., Cincinnati

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